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THE CRISIS IN PSYCHIATRIC EDUCATION

CHAIRMAN'S ADDRESS

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During the past year I have had the privilege of conducting an inventory and appraisal of psychiatric teaching facilities as a part of the activities of the Division of Psychiatric Education of the National Committee for Mental Hygiene.[1] This work was planned under the direction of an outstanding advisory committee, of which Adolf Meyer is chairman. It is based on actual visits to each school which covered a study of the facilities for psychiatric teaching, with interviews with the teaching staff in psychiatry, the deans and administrative officers, professors of medicine and professors of pediatrics. Additional information showing the attitudes of students and recent graduates has likewise been obtained from many schools. I should like to present a part of the factual data accumulated to date and summarized for the first sixty schools visited. These data, although discouraging in some respects, show that psychiatric education is rapidly developing in this country and that representatives of all the fields of medicine are cognizant of the problems of psychiatric education and of the importance of meeting the ideal of medical education, which should be to graduate students capable of intelligently practicing medicine.

The word "crisis" comes from the Greek word meaning "to separate." It also is used commonly to mean an important or crucial point. In medicine it is used to mean that change in a disease which indicates whether the result is to be recovery or death. Fortunately, psychiatric teaching is not in this position, but it seems to me that the word "crisis" could be used to indicate the crucial point that now confronts the teaching of psychiatry, as at the present time many noteworthy and significant changes are being developed which indicate a departure from the past standards in which a majority of the medical schools paid little attention to the teaching of psychiatry, usually presenting this work during the latter part of the senior year when the students are often not interested and have not been prepared to see the significance of the work as a part of their fundamental preparation for all medicine. The courses given in the past have usually been isolated from the other fields of medicine or consisted of a one day visit to a state hospital or institution for the feebleminded, along with a square meal and a vaudeville show for the students.

It was of great interest to me to know that the chairman's address before this section in 1914 was entitled "Some Factors Tending Toward Adequate Instruction in Nervous and Mental Diseases."[2] Dr Graves, in his address, spoke of a standard medical curriculum allotting one hundred and fifty hours in the clinical years to neurology and psychiatry; sixty hours in the third year to neurology, and ninety hours in the fourth year, of which fifteen hours were devoted to clinical conferences and fifteen hours to didactic lectures in psychiatry. In practically all schools at that time neurology and psychiatry were combined in one department and in approximately one half of these schools this combined department was independent of medicine. In the study made by Dr. Graves of the curriculum of eight-five schools, he stated:

> The tabulation shows specific defects in the following particulars: first, that 5 out of 85 schools give no instruction whatever in either neurology or psychiatry; second, that as far as can be determined from the catalogs, neurology and psychiatry are combined in instruction under the collective terms "nervous and mental diseases" in 25 of the remaining 80 schools; third, that of the 55 schools teaching neurology and psychiatry in separate courses in both third and fourth years, 27 . . . give a place to neurology and only 2 to psychiatry; fourth, that whereas in these 55 schools 32 teach neurology, only 2 teach psychiatry in the third year; yet in the fourth year 47 teach neurology and 42 teach psychiatry; fifth, that the average total hours allotted to the department of nervous and mental diseases in the schools of each class is much less than the total hours recommended in the standard curriculum.

THE PSYCHIATRIC CURRICULUM

The general situation in psychiatric education in 1932 is quite different and may be summarized as follows:

An analysis of the psychiatric curriculum in the sixty schools visited is of interest. Psychiatry functioned as a separate department in nineteen schools, as a department combined with neurology in fifteen schools and as a subdepartment of medicine in twenty-five schools.

In contrast with the former tendency to present psychiatry chiefly during the senior year, at the present time twenty-eight schools are engaged in teaching psychiatry during the preclinical years; thirty-one limit it to the clinical years, of which eleven schools present psychiatry during the fourth year only. One school limits its psychiatric teaching entirely to the third year.

Read before the Section on Nervous and Mental Diseases at the Eighty-Third Annual Session of the American Medical Association, New Orleans, May 12, 1932.

1. Dr. C. M. Hincks, general director of the National Committee for Mental Hygiene, and Dr. Ralph A. Noble, director of the Division of Psychiatric Education, allowed me to use this material.

2. Graves, W. W.: Some Factors Tending Toward Adequate Instruction in Nervous and Mental Diseases, J. A. M. A. **63**: 1707-1711 (Nov. 14) 1914.

and one school does not offer it at all. Elective work is offered in seventeen schools. The total hours devoted to the teaching of psychiatry were four thousand one hundred and thirty-seven; the average hours devoted to the teaching of psychiatry in each school were sixty-eight and eight-tenths. The variation in the number of hours was from a maximum of two hundred hours to a minimum of sixteen hours.

These findings and contrasts with those reported by the chairman of this section in 1914 indicate clearly a crucial turning point in psychiatric education. For instance, the majority of schools then presented psychiatry during the fourth year only, but many are now teaching psychiatry during the preclinical years. Graduate and elective work were universally neglected in 1914. The content of the psychiatric curriculum is of interest. In the teaching reported during the preclinical years, eleven schools are now presenting courses in psychobiology. Psychobiology is defined by Meyer as: "a science of personality-formation and personality-function, objective and yet reflecting all of man's subjectivity, keeping close to a common ground of generally accessible facts and concepts. Using a pluralistic natural history formation and making the necessary realignment of the sciences, psychobiology aims to bring together the physician and all those who work with human beings and to effect a division of labor in harmony with the concept of integation, with interpenetration rather than overspecialization." These courses are usually given during the first year. Eleven schools give courses in medical psychology which serve as an introduction to the clinical years, and fifteen schools give introductory courses in psychopathology. In 1932 the tendency in the teaching of psychiatry during the clinical years is to do away with didactic instruction, replacing it with teaching by clinics and clerkships and outpatient work. A discussion of the psychiatric curriculum will be presented later.

ANALYSIS OF CLINICAL FACILITIES FOR PSYCHIATRIC TEACHING

During the past decade better facilities have developed for psychiatric teaching. For instance, at the present time there are twelve psychopathic hospitals or institutes utilized by eighteen schools for teaching. These hospitals are well equipped for the teaching of psychiatry, with excellent ward facilities for the proper care of the patient, centering around a complete staff, adequate nursing and hydrotherapeutic facilities, occupational therapy and consultation and social service and outpatient facilities, including clinics for children. One is pleased to note that seventeen state hospitals are utilized for teaching. Psychopathic wards, frequently inadequate, are utilized for teaching in eighteen schools. Outpatient departments are available and utilized for teaching in forty of the sixty schools studied. In approximately one half of these schools, however, these facilities were considered inadequate for teaching. The outpatient departments were not available or utilized in the remaining twenty schools. It is also of interest to note that an excellent psychopathic ward of the United States Penitentiary at Atlanta, Ga., is used for teaching as well as two Veterans' Bureau hospitals. In many instances psychiatric facilities have been made available during the past two or three years, and since 1930 five medical centers have developed complete facilities for psychiatric teaching and research. In teaching schedules the past few years have seen the development of psychiatric clerkships and a gradual development of outpatient teaching. It is of interest to note that seven medical schools require a residence of from one to two weeks in a state hospital. This is a pleasing development in psychiatric education, as it enables the student to familiarize himself before graduation with the many problems offered by a state hospital and so to develop a sympathetic attitude. This teaching should, of course, be complemented by preclinical teaching.

It is obviously important for students to come in contact with the many clinical problems found in state hospitals. Many of these hospitals now have excellent reception services that are far superior to those the universities have to offer. I hope that in the future state hospitals will be used more for teaching. Students should be given regular summer assignments to those hospitals. No teaching organization should overlook the state hospitals.

The total budget for the teaching of psychiatry in the sixty schools is $360,000, and twenty-three of these operate on a full-time or part-time basis. Of this group, there were only seventeen operating on a full-time basis.

Interviews with professors of psychiatry in terms of their objectives of teaching may be stated as follows:

Aside from the necessity of giving the student the basis for recognition of the main reaction types, the major trend in teaching is the effort to prepare the student for the psychiatric conditions commonly encountered in general practice. As a corollary to this is stressed the importance of early recognition of mental illness and the principles of mental hygiene. So-called preventive measures are widely taught. From this broad basis there are many departures into progressive teaching, such as preclinical instruction in psychobiology and psychopathology (twenty-seven schools), both of which aim to ground the student soundly in the psychology of personality in health and in disease; advanced courses (frequently elective) to meet the needs of the student with special interest; special attention to the psychoneuroses, and the recognition of the need for better training of psychiatrists. On the red side of the ledger is the frank admission of no "real attempt to teach psychiatry" in one school, while in another the aim is solely to enable the student to pass state board examinations. Several schools continue to labor under the influence of the organicists to the exclusion of the modern psychiatric thought and a few more limit teaching to the barest outline of the classic types. These are in line perhaps more with contemporary legal formulas than with scientific progress. However, it was interesting to note that in the interviews with those held responsible for the teaching of psychiatry the predominant point of view may be described as genetic-dynamic, in which mental disorders are considered to result from the gradual accumulation of unhealthy reaction tendencies to life's situations. A genetic-dynamic study, therefore, means the study of all previous experiences of the patient, the total biography of the subject and the forces he may be reacting to, whether physical, organic, psychogenic or constitutional. The emphasis is placed on mechanisms and forces at work instead of on diseases by this group of psychiatrists, which is in contrast to the kraepelinian type of psychiatry based on classifications, profuse descriptions of symptoms and disease entities.

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In discussions with the professors of psychiatry in various schools, the following trends for future psychiatric teaching were noted:

1. Establishment of psychiatric hospital units in general hospitals.
2. Establishment of separate departments of psychiatry, adequately budgeted.
3. Establishment of a full-time or part-time teaching personnel.
4. Integration of psychiatry with other medical teaching.
5. Increase in number of curriculum hours with introduction of preclinical subjects such as psychobiology, psychopathology, etc.
6. Better utilization of outpatient facilities and the establishment of psychiatric clerkships.
7. Establishment of child guidance clinics in conjunction with teaching hospitals and their utilization in the teaching program.
8. Establishment of extramural psychiatric clinics and community programs.

Interviews with the deans of the schools visited may be summarized as follows:

Deans having a sympathetic attitude, fifty-four.
Deans having an unsympathetic attitude, six.
Criticisms of psychiatry (listed in order of frequency): lack of integration, isolation; inadequate personnel; varying terminology; inexactness; therapeutic inefficiency.
"I think it (psychiatry) is a most important clinical subject today. You can't train any physician for medicine unless he has some fundamental understanding of the personality approach to the patient."

This summary emphasizes the characteristic complaint that psychiatry has been too isolated from the other divisions of the medical curriculum according to the comments of the majority of the deans who have been interviewed.

The attitudes of the professors of medicine, as follows, indicate a similar trend, with marked emphasis on the frequency of the psychoneuroses and difficulties in establishing satisfactory treatment of this group:

Uniform interest in psychiatry.
An estimate as to the incidence of psychiatric problems ran from 2 to 75 per cent, with a median of 35 per cent.

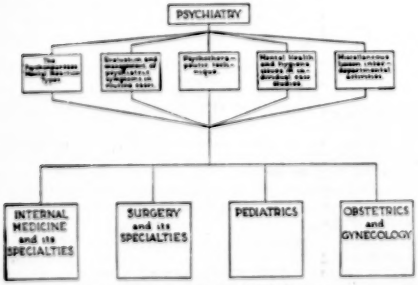

Chart 1.—Proposed functional relationships of psychiatry and integration with major divisions of the medical curriculum.

Chief criticisms (listed in order of frequency): isolation, lack of integration; inadequate personnel; varying terminology.
"It seems to me that adequate psychiatric teaching is the biggest reconstruction that can occur in present-day medicine."

Likewise, the attitudes of the professors of pediatrics interviewed in these schools indicate an awakening of interest in problems of behavior which cannot help but be significant in improving the work in all fields:

Uniform interest in psychiatry as it pertains to their own field.
Incidence figures as to psychiatric cases in pediatrics run from 10 to 70 per cent, with a median figure of 30 per cent.

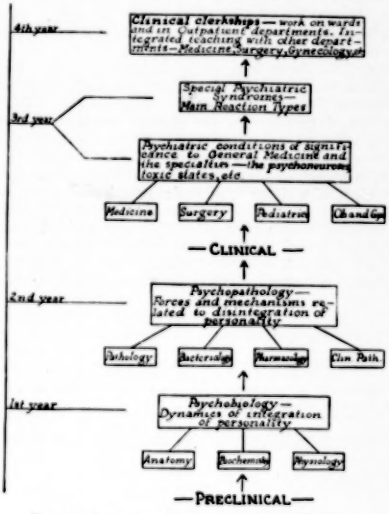

Chart 2.—Proposed outline for psychiatric teaching.

Chief criticisms (listed in order of frequency): inadequately trained personnel; lay workers in field of child guidance and mental hygiene; variation and obscurity in psychiatric nomenclature; isolation, particularly of child guidance clinics.

The majority (two thirds of those interviewed) feel that child guidance clinics should be associated with teaching hospitals and should be the joint responsibility of pediatrician and psychiatrist. One third feel that child guidance should be the province solely of the pediatrician.

One notes the reasonable criticisms regarding the frequent lack of adequate training of the personnel in psychiatry. The main problem of psychiatric education is to attract more men into this interesting field and to see that they acquire proper training. The requirements for postgraduate training should be most carefully considered, and at least five years should be spent in psychiatry following the preparatory rotating intern period. This five year period of training can be made possible through fellowships and should include all divisions of psychiatry, especially child psychiatry. In the visits made to the various schools the need for trained personnel was found to be very great in many centers, both to augment the teaching staff and for hospital and private work. The situation that now confronts psychiatry in the lack of personnel in this field is similar to that which confronted pediatrics a decade ago. We hope that our field will solve this problem as well as it was solved by the pediatric group.

The foregoing factual data centering around the attitudes of the professors of psychiatry and members of

the teaching staff, the deans, professors of medicine and professors of pediatrics, indicate to me that there are two distinct phases of psychiatric teaching, undergraduate teaching and postgraduate training for the specialty of psychiatry. By far the more important of these is the first, and psychiatry is therefore not to be looked on merely as a specialty but as a part of the fundamental training of every medical man. Those outside of the field who have given considerable thought to these problems feel that the effectiveness of psychiatry has been injured by its isolation. In many respects we ourselves have been responsible for this isolation.

Chart 1 indicates to me possible measures for the integration of psychiatry in relation to the four major divisions of the medical curriculum.

It is to be seen in chart 1 that the first four topics are clinical, and the fifth topic, interdepartmental and liaison activities, is administrative and calls for combined clinics with each field. These combined clinics mean not only a breaking down of the isolation and of greater integration with psychiatry, but also a getting-together principle which should react well to both

Chronological Table of the Development of Psychiatric Teaching in the United States

The Past		*The Present Crisis*	*The Future*
Up to 1918	From 1918 to 1930	From 1931 to 1932	The Completion of the Integrating Program
Psychiatry in Isolation	The Break-Down of Isolation		
1. Teaching largely in terms of the insanities	1. Emphasis on psychiatry as a fundamental part of general medical training	Period of Inventory and Reorganization	1. Complete integration under the same roof: psychiatric beds in the general hospital
2. Teaching didactic, descriptive, limited to clinical years	2. Introduction of psychiatry into the preclinical curriculum		2. Psychiatric principles applied to the management of the sick under the total personality concept
3. Mental hospitals separated from the universities	3. The acceptance of genetic-dynamic principles		3. The development of liaison activities with other departments of medical teaching
4. Growth of asylums and the custodial idea	4. Greater interest in the preventive idea: mental hygiene, child guidance, community programs		4. The development of psychotherapeutic clinics and institutes of research in the universities
5. Inadequate teaching personnel	5. Emphasis on psychotherapy, psychodynamics, break-down of therapeutic nihilism	The development of adequate teaching requirements for the fundamental training of all physicians and the organization of scientific and economical means of meeting the medical, social and individual problems of mental illness.	5. Establishment of full-time or part-time teaching personnel
6. Nihilistic attitudes regarding therapy	6. Growth of integrative idea, correlating psychiatry with other divisions of medical teaching		6. Closer integration with public health and preventive medicine
7. Dominance of organic point of view	7. Development of clinical research		7. Establishment of behavior clinics in close correlation with teaching hospitals and the departments of pediatrics
8. Lack of interest from students and faculties	8. Development of trained personnel		8. Establishment of extramural clinics and community programs for the care of the mentally ill
	9. Growing interest on part of students		9. Elimination of the custodial hospitals as isolated units
			10. Establishment of requirements for the specialty of psychiatry through a board of qualified examiners approved by the American Psychiatric Association and organized by the National Board of Medical Examiners

fields, especially in terms of establishing the treatment of the whole patient. Through such an integration of psychiatry with the other four fields we can expect the future internist, the surgeon, the obstetrician and the pediatrician to have a reasonable understanding of mental reaction types, especially the psychoneuroses, and to be able to evaluate mental symptoms (to the extent of at least recognizing the early stages of a delirious reaction and avoiding excessive use of sedatives). Mental hygiene and mental health issues must always be considered by the adequately trained physician in all fields.

In terms of furthering this essential integration with psychiatry I should like to propose a provisional curriculum that emphasizes the importance of presenting psychiatry during each of the four years of medicine with special emphasis on the psychoneuroses (the minor psychoses) (chart 2).

The facts that every medical man should know regarding the major psychoses are to be presented, although detailed psychopathologic studies are not considered necessary here since they are a fundamental part of postgraduate training. It will be seen in the proposed outline that practically all of the preclinical work constitutes what is necessary for further training in psychiatry as well as what is equally necessary as a part of the training for all medicine. This scheme is not presented in terms of number of hours, although for purposes of orientation they have been inserted. It does not call for additions to the total curriculum as much as a redistribution of hours, and other departments have often expressed a willingness to give up hours to psychiatry. I would deplore very much any efforts for standardization of a psychiatric curriculum. The number of hours is of little importance compared to the training of the teacher, the methods and content of teaching and the clinical facilities available for individual case study by the student.

COMPARISON OF REACTIONS OF STUDENTS WITH REACTIONS OF RECENT GRADUATES

As a part of this study and inventory of present-day psychiatric education the following summary has been prepared contrasting the attitudes of 800 undergraduates with 152 recent graduates, chiefly comprising the present intern and resident group:

Summary on Eight Hundred Undergraduates.—The following questions and answers were given:

1. Do you feel interested in the applications of psychiatry to general medicine? Indicate reasons for your interest.

Yes, 756 or 94.25 per cent. No, 44 or 5.75 per cent.

2. Has your *instruction* in psychiatry been a material factor in this interest? (*a*) Slight? (*b*) Moderate? (*c*) Large? If so, in what manner?

(*a*) 176 or 22 per cent. (*b*) 376 or 47 per cent. (*c*) 248 or 31 per cent.

3. Do you feel that you understand what is meant by psychotherapy, so that you could use its principles in the treatment of patients? (*a*) No, or very little? (*b*) With reasonable chance of benefit? (*c*) With considerable confidence?

(*a*) 308 or 38.5 per cent. (*b*) 444 or 55.5 per cent. (*c*) 48 or 6 per cent.

4. Do you feel that your psychiatric instruction has given you adequate practical knowledge of the psychoneuroses, their genesis, prevention and treatment? (*a*) Insufficient? (*b*) Reasonably sufficient? Indicate any material deficiencies.

(*a*) 320 or 40 per cent. (*b*) 480 or 60 per cent.

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5. Do you feel that you understand the principles involved in mental hygiene, from the point of view of their practical application? If so, to what extent? (*a*) No, or very little? (*b*) With reasonable understanding? (*c*) With special interest?

(*a*) 288 or 36 per cent. (*b*) 472 or 59 per cent. (*c*) 40 or 5 per cent.

Summary on One Hundred and Fifty-Two Graduates.—The following questions and answers were given:

1. Do you feel interested in the applications of psychiatry to general medicine? Indicate reasons for your interest.

Yes, 147 or 97 per cent. No, 5 or 3 per cent.

2. Has your *instruction* in psychiatry been a material factor in this interest? (*a*) Slight? (*b*) Moderate? (*c*) Large? If so, in what manner?

(*a*) 63 or 41.5 per cent. (*b*) 63 or 41.5 per cent. (*c*) 26 or 17 per cent.

3. Do you feel that you understand what is meant by psychotherapy, so that you could use its principles in the treatment of patients? (*a*) No, or very little? (*b*) With reasonable chance of benefit? (*c*) With considerable confidence?

(*a*) 69 or 45 per cent. (*b*) 77 or 50 per cent. (*c*) 6 or 5 per cent.

4. Do you feel that your psychiatric instruction has given you adequate practical knowledge of the psychoneuroses, their genesis, prevention and treatment? (*a*) Insufficient? (*b*) Reasonably sufficient? Indicate any material deficiencies.

(*a*) 87 or 57 per cent. (*b*) 65 or 43 per cent.

5. Do you feel that you understand the principles involved in mental hygiene, from the point of view of their practical application? If so, to what extent? (*a*) No, or very little? (*b*) With reasonable understanding? (*c*) With special interest?

(*a*) 69 or 45 per cent. (*b*) 78 or 51 per cent. (*c*) 6 or 4 per cent.

In general, it may be said that there is a frequent correlation between the answers to questionnaires and the evaluations as to teaching adequacy made in this report. One school, in which there is admittedly no real attempt to teach psychiatry, demonstrates this very well in that only four of twenty-nine students thought their teaching in psychiatry adequate.

On the whole, the questionnaires have been well received, and many interesting comments have been received from students. The interest in psychiatry is quite uniform, but there is great variation in answers to questions grouped under 3 and 5. One student from Yale thought the questionnaire ridiculous. Perhaps the most significant figure obtained is in group 4, in which 40 per cent of the students considered their psychiatric training insufficient to their needs.

OPINION CONCERNING APPRAISAL OF SCHOOLS VISITED

In terms of an inventory and appraisal of the sixty schools visited to date, sixteen were considered to offer adequate teaching in psychiatry. This tentative appraisal was made on the basis indicated, that is, the teaching personnel, the method and content of psychiatric teaching and the clinical facilities available. It is quite encouraging to realize that in ten of the remaining schools one would estimate that adequate teaching will develop rapidly in the immediate future. In fact, during the year of this study one school has established adequate teaching, although the course was definitely inadequate during the previous school year.

GENERAL COMMENT

In a limited presentation of this type one is forced to pick out the outstanding factual material concerning psychiatric education. It is not possible to give in detail a description of the content of the teaching curriculum or to report on characteristic local set-ups and situations in psychiatry which must always be carefully evaluated. There is a challenge given to all medicine in the present situation. We have certainly reached a crisis in psychiatric education, which in terms of chronological relationship, beginning with the revival of interest in psychiatry during the war, may be illustrated by the accompanying table.

This crisis in psychiatric education is a part of the general crisis in medicine today, in which we all recognize changing attitudes of the relation of the physician to society. In these changing attitudes the public demands a greater recognition of the important part social forces play in the activities of the individual as well as continued scientific achievement in preventive medicine. Mental hygiene may be considered a very important part of preventive medicine. The way we meet this crisis in psychiatric education and the part that psychiatry will play in the development of medicine in the future will decide the degree of social usefulness and therapeutic efficiency of the physician in general. The contributions of psychiatry, like those of preventive medicine, should soak through the whole curriculum. This will mean a type of training that will result in the treatment of the total patient by graduates of medical schools. This total patient has a mind as well as a body. "Mind is the human being in action," and this action is spoken of as behavior, which is just as important a part of the clinical study of a patient as the understanding of physical problems, and the two cannot be separated.

MEDICAL TEACHING IN TUBERCULOSIS

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At the meeting of the International Union Against Tuberculosis at Oslo, in 1930, one entire day was given over to a discussion of medical teaching in tuberculosis. In view of the fact that this subject is gaining greater importance, a study was undertaken to determine its status in the United States.

On reviewing the statistics which have been compiled, one observes that tuberculosis mortality has decreased in this country to a point at which its rate in 1931 was 67 per hundred thousand. This is one third of the rate that existed in 1904, and during these twenty-seven years tuberculosis has dropped from first place to seventh place as a cause of death. At the present time this disease takes its greatest toll of life between the ages of 15 and 45, and between these ages it still heads the mortality list. This in itself calls for continued consideration of the educational aspects of this very vital subject.

Two problems immediately present themselves; viz., the medical problem and the public health problem. From the medical standpoint it is essential to appreciate that the final favorable result is dependent in no small measure on the early diagnosis of the disease. On the other hand, from the public health standpoint, a late diagnosis delays supervision and control and makes possible increased dissemination of the infection in the community.

During the year 1930, in the public clinics of the five large cities enumerated in table 1, 11,782 individuals

were diagnosed for the first time as having tuberculosis. The table gives the stages of this disease and also the percentage of patients in the various stages as they have been found in these communities and in the total.

From an analysis of these statistics it is obvious that in 70 per cent of these patients the disease had progressed to a stage, moderate or far advanced, lessening the opportunity for recovery. The community likewise has been subjected to the possible hazard of uncontrolled infection.

TABLE 1.—*Stages of Tuberculosis in Persons of Five Cities*

	Minimal Incipient		Moderately Advanced		Far Advanced		
	Number	Per Cent	Number	Per Cent	Number	Per Cent	Total
Chicago	1,088	34	1,153	36	962	30	3,203
New York	1,197	31	1,792	46	885	23	3,874
Cleveland	264	37	330	46	124	17	718
Philadelphia	964	27	1,427	40	1,178	33	3,569
Los Angeles*	38	9	212	40	168	51	418
Totals	3,551	30	4,914	42	3,317	28	11,782

* Do not show stage on nonactive pulmonary cases.

Has the lay education, conducted continuously for twenty-six years, failed to bring a response from these patients so that they did not present themselves for a timely diagnosis? While this is true in some instances, there are those patients who have presented themselves, and for whom a correct diagnosis was not made until the disease had progressed beyond the minimal stage. On this assumption we have for some time made the statement, "if we are to educate lay individuals to suspect a disease, the medical practitioner must be able to confirm or remove that suspicion."

TABLE 2.—*Status of Tuberculosis Teaching*

	Number	Per Cent
All colleges	64	100.0
Special department	19	29.7
No special department	45	70.3

TABLE 3.—*Type of Instructor in Didactic Course*

Type of Instructor	Number	Per Cent
All colleges	64	100.0
Internist	22	34.4
Tuberculosis specialist	33	51.6
Both internist and tuberculosis specialist	9	14.1

TEACHING OF TUBERCULOSIS IN THE UNITED STATES

To determine the status of medical teaching in tuberculosis in the medical colleges in the United States, questionnaires were sent to these institutions. There are sixty-six approved colleges which offer a complete curriculum in medicine. Sixty-four of these colleges returned their questionnaires more or less completely filled out. The data have been arranged in tables which are practically self-explanatory.

Nineteen colleges, or 29.7 per cent, have a special department for teaching tuberculosis. This situation is usually found because some clinician has developed an unusual interest in tuberculosis. Obviously the intensification of this interest has resulted in improved facilities for teaching.

Thirty-three colleges, or 51.6 per cent, have availed themselves of the specialistic knowledge in teaching tuberculosis to their students. This is an important consideration. Nine additional colleges, or 14.1 per cent of the total, have teaching in tuberculosis divided between the internist and a tuberculosis specialist.

Teaching of clinical tuberculosis is done in general medical dispensaries in 71.9 per cent and in general hospitals in 68.8 per cent of the group referred to in table 4. These services are dependent on the occasional tuberculous patient admitted to them.

The instructor for teaching tuberculosis should be a member of the faculty of the college which is affiliated with the tuberculosis institution in an attending or consulting capacity.

Table 6 shows teaching affiliations with tuberculosis institutions. The colleges with special tuberculosis departments show affiliations in greater number than those having no special department. Affiliations are of importance only when the sanatoriums and those teaching are utilized to the fullest extent.

The college faculty having representatives on the specialty services of tuberculosis sanatoriums number only thirty-seven, or 57.8 per cent. This specialty type of affiliation is recognized today as important in rounding out not only the medical service to the patient but the medical knowledge given to the student.

TABLE 4.—*Type of Place in Which Clinical Work is Done*

Type of Place	Number of Colleges	Percentage of Colleges Reporting
General medical dispensaries	46	71.9
Special tuberculosis dispensaries	25	39.1
Tuberculosis sanatoriums	28	43.8
Tuberculosis hospitals	23	35.9
General hospitals	44	68.8

Eleven colleges reported resident clerkship affiliations of varying lengths of time. In our opinion, the resident clerkship plan is a most valuable asset to the medical students' tuberculosis curriculum.

This table shows that only nine of the sixty-four medical colleges offer regular postgraduate courses. There is a definite lack of facilities for postgraduate instruction for that large group of medical practitioners about to graduate or for those who have been in practice for many years. The colleges with special tuberculosis departments, numbering nineteen, have failed to appreciate this great need, for only one of this number offers a postgraduate course. The curriculum committees of a number of colleges complain of the difficulty in arranging their schedule to include more hospitals for special courses. This cannot hold true of the postgraduate course, which, when properly presented, attracts large numbers of physicians.

TABLE 5.—*Type of Instructor Giving Clinical Instruction*

Type of Instructor	Number	Per Cent
All colleges	64	100.0
Faculty	41	64.0
Tuberculosis clinician associated with outside institutions	1	1.6
Both faculty member and tuberculosis clinician associated with outside institutions	21	32.8
No report	1	1.6

THE TEACHING OF TUBERCULOSIS IN EUROPE

The undergraduate teaching of tuberculosis in German universities has not been stressed to any considerable extent. Prof. Wilhelm His[1] of Berlin recently reported on such teaching in his country. A chair of tuberculosis does not exist in any German university.

1. His, Wilhelm: Teaching of Tuberculosis, Tr. Internat. Union Tuberculosis, Oslo 7: 454-469, 1931.

Tuberculosis is discussed in the different divisions in lessons on pathology, anatomy, clinical medicine, surgery, pediatrics and dermatology. The roentgen interpretation is demonstrated in courses on clinical medicine. The lectures on tuberculosis, given in the

TABLE 6.—*Tuberculosis Teaching Affiliations According to Status of Tuberculosis Teaching*

Teaching Affiliations	All Colleges	Colleges with Special Tuberculosis Department	Colleges with No Special Tuberculosis Department
All colleges	64	19	45
Municipal sanatoriums or dispensaries	22	7	15
County sanatoriums or dispensaries	5	1	4
State sanatoriums or dispensaries	6	2	4
Private institutions	5	1	4
Municipal plus state or county sanatoriums or dispensaries	7	3	4
Municipal or state sanatoriums or dispensaries plus private institutions	7	3	4
No affiliations	12	2	10

universities, do not take place at regular intervals. They also are usually limited to pulmonary and surgical tuberculosis and the therapeutic methods that have been developed in the care of these conditions. Demonstrations on the diagnosis and treatment are included in the teaching curriculum, in outpatient departments and in the wards. The lectures on public health include discussions on the social aspects of tuberculosis. A great number of the universities arrange medical trips once or twice a year to visit sanatoriums and inspect their work. Tuberculosis dispensaries and sanatoriums are, however, not definitely affiliated for teaching purposes with the medical departments of the universities. In other countries on the continent of Europe a similar condition exists for teaching undergraduate students tuberculosis

TABLE 7.—*Representation of the Professional Staff Representing the Nontuberculosis Specialties on Tuberculosis Sanatorium or Hospital Consulting Staffs*

Representation	Number	Per Cent
All colleges	64	100.0
Represented	37	57.8
Not represented	21	32.8
No report	6	9.4

—tuberculosis not being taught in a special division but being given as part of the general courses in the curriculum. Sir Robert Philips of Edinburgh has manifested a deep interest in the teaching of tuberculosis. This has resulted in the development of a special department of tuberculosis at the Edinburgh University. A rounded out curriculum covers the various phases of this disease. The didactic lectures are amplified by practical demonstrations. This eminent authority on tuberculosis states that "the need for training in tuberculosis in one shape or another is generally felt."

POSTGRADUATE TEACHING OF TUBERCULOSIS IN EUROPE

Postgraduate teaching of tuberculosis in Germany was stressed long before it was in other countries and a good organization was developed for instruction to the medical practitioner. Professor His, in discussing this phase of teaching, brings forth the fact that all the universities organize regular postgraduate courses for doctors, which include tuberculosis. There are, however, a few universities which have organized special courses in this disease. The Central German Committee for Postgraduate Teaching organizes courses for the study of tuberculosis independent of those conducted in the universities. The teaching in some of these is done in sanatoriums or in the tuberculosis services of general hospitals. The curriculums are arranged so that they deal principally with problems of tuberculosis as they relate to anatomic pathology, diagnosis, therapeutics and social prophylaxis. Modified series of lectures are sometimes organized for Saturday and Sunday to appeal to medical practitioners who can attend without interrupting their work only on these days. From 1920 until 1929 the German Postgraduate Committee had organized 117 courses, with series of lectures in fifty-eight towns or sanatorial centers. The number of those in attendance has varied between 40 to over 200. Moreover, in Prussia, thirty courses were organized in thirteen sanatoriums, while in other German states ten sanatoriums functioned in giving twenty-three courses. In Italy, Holland, Norway, Austria, Poland, Rumania and Sweden, postgraduate courses are given with regular and irregular frequency. The limited number of such courses given in these countries fails to emphasize the importance of the tuberculosis problem. In some of

TABLE 8.—*Period of Clerkship in Colleges Reporting Resident Clerkship Affiliations*

Period of Clerkship	Number of Colleges
All colleges reporting resident clerkship	11
One week	3
Two weeks	2
Four weeks	3
Eight weeks	1
No report	2

these countries postgraduate teaching is subsidized and arranged for either by the government or by the public health agencies in connection with universities and tuberculosis institutions. Great Britain does not manifest the interest in postgraduate teaching that is in evidence on the continent.

A PROGRAM OF TUBERCULOSIS TEACHING

Medical colleges, located as they are in urban centers, have within a short distance sanatoriums for the care of the tuberculous. The sanatorium constitutes an ideal school for the study of tuberculosis. It requires only the association of the teaching faculty of the medical

TABLE 9.—*Postgraduate Instruction in Tuberculosis According to Status of Tuberculosis Teaching*

Postgraduate Instruction	All Colleges	Colleges with Special Tuberculosis Department	Colleges with No Special Tuberculosis Department
All colleges	64	19	45
Regular postgraduate courses	9	1	8
Postgraduate courses possible of arrangement	3	3	...
No postgraduate course	42	13	29
No report	10	2	8

college with the sanatorium through the appointment of such teachers to the attending and consulting staffs.

The staff specialists, recruited from the medical colleges, bring to the tuberculosis institution a knowledge not only of tuberculous conditions but also of nontuberculous complications that often require urgent care. The institution makes available, for purposes of lecture and demonstration, unlimited material. Realizing this,

one of us,[2] in 1927, as director of the municipal tuberculosis organization of Chicago, organized a school of tuberculosis. A consulting staff, representing the professional ranks in the various specialties from the four class A medical schools in Chicago, was appointed. The courses were as follows:

A. *Undergraduate Teaching.* — 1. Resident clerkship. Twelve students were domiciled at the sanatorium for a period of from one week to one month, each student being assigned to one resident physician. A definite curriculum was outlined and followed.

2. Undergraduate didactic lectures. An entire class not in residence at the sanatorium was given a series of twelve half-day lectures there. These lectures involved the different phases of tuberculosis and practical demonstrations with material from the laboratories and infirmaries.

3. Undergraduate research fellowships. From six to eight students were assigned to assist in research problems during their vacation intervals of four months. This was to train and stimulate these men for future medical research. They were paid a small stipend and furnished maintenance.

B. *Postgraduate Teaching.* — 1. Graduate fellowships. A graduate resident fellowship in surgery and in medicine with remuneration and maintenance was appointed to each of these services. This was to train and prepare these fellows for special work, such as chest surgery. These fellowships were registered with the graduate school of one of the universities for a higher academic degree.

2. Postgraduate clinical instruction to the practicing physician in the environs of his own community. A group of physicians was consolidated into a unit through its local medical society. A meeting hall was obtained nearby. A series of didactic lectures was given by specialists in the various phases of tuberculosis, such as bacteriology, pathology, symptoms, diagnosis and x-rays. These lectures were profusely illustrated with material brought from the sanatorium laboratories. This was followed by three months of intensive chest diagnostic work in the local clinics of the sanatorium, maintained in various parts of the city. On completion of this course, if proficiency was demonstrated, an appropriate certificate was awarded.

Postgraduate special courses also were arranged for the practicing physicians at the sanatorium. The public health phases of tuberculosis work were emphasized.

During the four years of this program, approximately 1,000 senior medical students were given resident clerkships. Approximately 500 students also had the undergraduate twelve weeks' course of lectures in tuberculosis; 110 doctors were given postgraduate courses, and six resident undergraduate fellowships and two graduate fellowships were maintained.

CONCLUSIONS

Tuberculosis continues as one of the major problems from medical and lay standpoints.

The inadequacy of undergraduate and graduate instruction in tuberculosis in the medical colleges of this country prompted this report. This is evidenced by statistics which can be promptly analyzed.

Some medical colleges have thus far no provision for affiliation with tuberculosis sanatoriums so that their students can be properly educated in the problems of tuberculosis.

The European method places its main emphasis on postgraduate study. In contradistinction, a plan developed in this country stresses the undergraduate as well as the postgraduate instruction.

Special attention is directed to undergraduate teaching through the resident clerkship. Postgraduate teaching involves a systematic program of fellowships. Extension courses have brought to the community doctor the teaching clinic, making it possible for him to become familiar with the advances in the recognition and management of tuberculosis.

104 South Michigan Avenue—450 Seventh Avenue.

2. Goldberg, Benjamin: A School of Tuberculosis, Bull. A. Am. M. Coll. **3**: 329 (Oct.) 1928.

CURRENT CRITICISMS OF PSYCHIATRY

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This paper refers to fourteen articles containing criticisms of mental hygiene and psychiatry, which have appeared in magazines or medical journals during the past four years. They have been written by physicians, welfare workers, journalists and others, and have appeared in such publications as THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, *Journal of Nervous and Mental Disease, American Journal of Diseases of Children, Lancet, New York State Medical Journal* and *Outlook and Independent*, and in editorial pages of the New York *Times* and in the New York *World Telegram*. They have been printed under such titles as "The Menace of Psychiatry," "The Legend of the Prevention of Mental Diseases," "Psychiatric Bunk," "Psychiatry, the Weak Sister of Medicine" and "We've Gone Psychiatric."

The criticisms are chiefly unfavorable, although some are otherwise. While it is generally wise to ignore adverse comments, the object here is to try to clarify certain facts rather than to bolster up one side of an argument. The criticisms do not relate to the care of mental patients in institutions, but to what psychiatrists have been attempting to do in recent years in the community by way of early treatment, prevention of mental breakdowns, child guidance and so forth.

A pediatrician, under the title of "The Menace of Psychiatry,"[1] criticized intelligence tests, behaviorism, psychoanalysis and particularly the educational campaign in child guidance. He took exception to remarks in Watson's book on behaviorism as follows: "No one today knows enough to raise a child. The world would be considerably better off if we were to stop having children for twenty years and were then to start again with enough facts to do the job with some degree of skill and accuracy."

In criticizing intelligence tests, he told of one young mother who was much disappointed because her child had an intelligence quotient of only 119 whereas a neighbor's child had a rating of 129! No explanation by the physician that the test was not an absolute criterion could shake her convictions of the significance of its literal interpretation. Again, this writer described a school in which intelligence quotients were posted and all the children knew their ratings: superior, inferior and so on. One child who was retarded had been placed in a class with morons, much to his and his parents' distress. The writer stated, in effect, that

Read before the Section on Nervous and Mental Diseases at the Eighty-Third Annual Session of the American Medical Association, New Orleans, May 12, 1932.

1. Brennemann, Joseph: The Menace of Psychiatry, Am. J. Dis. Child. **42**: 376 (Aug.) 1931.

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mentality can be judged better through observation of the child by an experienced physician than by formal tests.

This critic believed that harm may be done by telling parents too much about child guidance. He stated that anorexia in children is indirectly traceable in many cases to the use of height and weight tables. This standardization encourages parents to keep charts and urge their children to eat more in case of underweight. He pointed out that children are like other young animals with normally hearty appetites, but because of this urging, often become disgusted with food. Hence a problem is created. He feared that this same attempt at standardization carried into the field of conduct and behavior will work even greater havoc.

Again, he questioned current methods in sex education and also the freudian interpretation of explaining some childhood conduct on the basis of the Oedipus complex, the infantile libido, etc.

Although this writer quoted the definition of psychiatry from Webster's Dictionary, he nevertheless included under psychiatry not only subjects legitimately belonging thereto, such as mental hygiene and child guidance, but also psychology, behaviorism and parental education. The latter subjects, while bearing on psychiatry, are related to it only in some respects.

As a contrast to this criticism may be quoted the remarks of another pediatrician,[2] as follows:

> Every pediatrician admits that his practice cannot be carried on effectively unless he faces and solves problems involving child guidance and parental education. He may dislike the idea that this attitude involves him in psychology, psychiatry and education, but he can hardly avoid the entanglements. . . .
>
> Several obvious attitudes are possible for him. The most comfortable one is to sit back and reflect upon the traditional prestige of the practioner of medicine. . . .
>
> A second relatively simple solution, widely practised, is to damn the whole notion of psychiatry, psychology, progressive education and the like and deny the validity of all criticism of our own upbringing. Reaction of this sort is extremely work of any kind. . . .
>
> A third possibility, which involves some difficulty for those who choose to investigate it, is based on a recognition by pediatricians that there must be something in psychology, psychiatry, and mental hygiene.

A director of an important social agency wrote a criticism of psychiatry under the title of "Psychiatric Bunk."[3] In this article, he criticized behaviorism and its theories, especially as to the methods of conducting experiments. He criticized those whom he terms as "half-baked, self-styled" psychiatrists who wish to psychoanalyze every one. He discussed so-called expert psychiatrists in the court room whose hair-splitting contentions mean nothing to the ordinary person. The article contained a criticism of intelligence tests as used in child guidance clinics, in examining immigrant applicants for admission to this country and in the army during the World War.

This writer further stated how a social worker investigating a child's home in a tenement district came to the obvious conclusion, after some weeks' study, that the child was living in a bad environment.

By this writer, a distinction was implied between the leaders of psychiatry and those whom he termed "half-baked," but in the paper the distinction is not very evident. He really seemed to regard them all as half-baked! Again, while he stated that there is a definite difference between psychologists and psychiatrists, he made no clear distinction in his article, and he seemed to prejudice his readers against psychiatry by his title "Psychiatric Bunk." Quotations from this article appeared in a number of papers.

A neurologist, under the title of "The Legend of the Prevention of Mental Disease,"[4] took exception to the educational campaign in mental hygiene. He stated: "Enthusiastic mental hygiene tells us that it is concerned with the prevention of mental deficiency, criminality, the psychoneuroses, the psychoses, anti-social traits, family unhappiness, divorce, prostitution, alcoholism, sexual perversion, epilepsy and other such simple matters. All one can do is to gape and wonder or, perhaps, ask a few questions." In the course of his discussion, the writer stated that criminality depends on inherited factors to a very large degree. He further asked what advance has been made in psychiatry in the past twenty-five years by way of new discoveries which will warrant promises that mental disease can be prevented.

The same writer spoke of what he called the shameful spectacle in the propaganda for cancer prevention, pointing out that while we employ the knife, radium and x-rays, nothing is known of true prevention or control of cancer. He feared for the results of a similar campaign in the field of mental hygiene.

Another neurologist was quoted as saying that psychiatrists are barking up the wrong tree in basing their theories on environment rather than on heredity. Further remarks attributed to him indicated that he was not in favor of a preventive campaign in respect to mental disease.

An English psychiatrist, when attending the International Congress of Mental Hygiene held in Washington in May, 1930, visited a number of institutions and other psychiatric centers in this country at that time. He stated, under the title "Impressions of American Psychiatry,"[5] that in the United States one could see almost everything which was worst and also best in psychiatric practice. He commented favorably on the research activities in the leading psychiatric centers. One cannot rightly take exception to certain unfavorable observations made by him.

The foregoing criticisms fall into two main classes. In the one are activities which, although more or less identified with the mental hygiene movement, are not controlled by psychiatrists or exclusively of psychiatric nature. In this class belong intelligence tests, behaviorism and, to some extent, psychoanalysis.

INTELLIGENCE TESTS

Intelligence tests have been subject to more or less criticism since they first began to be used in this country in about 1912. It has been stated that intelligence cannot be measured, that emotions influence the result, that the tests may be studied up or that they may be deliberately faked.

Intelligence tests are used quite generally by psychologists in examining children, although psychiatrists also use them in child guidance clinics, schools for defectives and elsewhere. However, psychiatrists endorse intelligence tests only as they evaluate them along with the history, physical examination and other considerations. They have been loud in their disapproval of their unwise application. The psychiatrist in

2. Bronson Crothers, M.D.: The Pediatrician's Relation to Psychiatry and to Education, South. M. J., January, 1932.
3. Coulter, Ernest K.: Psychiatric Bunk, Outlook and Independent, Oct. 7, 1931.
4. Wechsler, I. S.: The Legend of the Prevention of Mental Disease, J. A. M. A. 95:24 (July 5) 1930.
5. Macpother, Edward: Impressions of American Psychiatry, Lancet 1:848 (April 19) 1930.

using intelligence tests may be compared to the pediatrician prescribing commercial infant foods on occasion. The latter would not wish to be held responsible for the use of these foods unless under his strict supervision.

Despite drawbacks and limitations, intelligence tests are as accurate as many other scientific methods now in use. They no longer are regarded as infallible as their enthusiastic supporters once believed; nor do they carry with them the power of prophecy. If given and interpreted by those qualified to use them, they should not constitute a menace.

BEHAVIORISM

Behaviorism is a theory identified by some persons with the mental hygiene movement. However, any one criticizing psychiatrists should be better informed than to classify behaviorism as of psychiatric origin. The originator of behaviorism is not a physician, much less a psychiatrist. He probably would not feel flattered to have behaviorism, which has created world wide interest, regarded as a part of mental hygiene. A majority of psychiatrists understand behaviorism no more fully than do most other physicians.

PSYCHOANALYSIS

Psychoanalysis, since the beginning of the present century, has aroused interest in many parts of the world. However, while psychoanalysis has been closely associated with psychiatry, its theories did not originate from conventional psychiatric sources. Freud has never been closely associated with psychiatrists as a group. And psychiatrists, far from having endorsed psychoanalysis without reservation, have often been severe in their criticism of it. However, psychiatrists are investigating its principles, many of which have been incorporated in psychiatric practice without appreciation of the origin. Such terms as repression, retardation, inferiority complexes and many other terms used by psychiatrists are of psychoanalytic origin.

Psychiatry and mental hygiene have a broader field than psychoanalysis. It would be unfortunate if psychiatry limited itself to preoccupation with psychoanalytic principles and ignored the broad foundations on which it originated. For the present, it would appear best for those who are not fully conversant with psychoanalysis to refrain from undue criticism, but likewise to withhold their full endorsement.

Other activities of psychiatrists have been adversely criticized in the aforementioned articles. The latter group of activities are of strictly psychiatric origin, and psychiatrists are responsible for them. These include such activities as child guidance, public education in mental hygiene, the psychiatric social worker and expert court testimony by psychiatrists.

CHILD GUIDANCE

The education of parents in some aspects of the guidance of children has doubtless resulted in making some mothers unduly concerned about their children's development. As pointed out in one of the aforementioned criticisms, public education about medical matters may have an undesirable influence on some persons. Physicians are visited repeatedly by persons with normal hearts, requesting an examination, although they may have had many previous examinations. Reassurance is of little value to these patients as they are in constant fear that they will drop dead of heart disease. Others fear tuberculosis and seek frequent examinations, and still others fear cancer. There are patients who specialize in having operations and who succeed through persistent complaints in getting surgeons to operate on them, often more than once. Then there are some who do not fear disease for themselves but for their children.

These patients are seen both in private practice and in free clinics. A knowledge of disease has offered them a peg on which to hang their anxieties and complaints. While information about mental hygiene or preventive medicine gives such patients some definite disease to fear, it does not create the fear. The fear is a symptom of their nervous state. This situation, therefore, does not justify the suppression of public health movements.

Education of the public in the field of child guidance deals with such subjects as the training of young children in proper habits of eating and sleeping and in toilet habits, the acquiring of emotional control in early childhood, encouraging parents neither to pamper their children nor to dominate them, and the recognition of unfavorable teaching methods for some children who are scholastically handicapped. Any teaching which calls for too much standardization, as in height and weight or in mental qualities, is undesirable, as has already been stated. But such rigid teaching need not be a part of public education. Child guidance clinics are being used with increasing frequency in schools, in children's courts and by welfare agencies, and, wisely directed, they should be a benefit rather than a menace.

Some extremists, it is true, such as those advocating absolute liberty for the child under all circumstances and those cataloguing almost his every word and action, have unwisely attempted to take a part in child guidance activities. Psychiatry cannot control these misdirected activities any more than medicine can control faddists in the direction of nature cure, diets and other eccentric health activities.

The writer who referred to the needless investigation by the psychiatric social worker, as mentioned, was not fully justified in his criticism. A boy may live in poverty in a basement, but nevertheless grow up to be a successful and capable man. The social worker was doubtless looking for less obvious influences, such as an unfavorable example by the father or mother, insufficient oversight, bad companionship and so on. While social workers are doubtless prone to make mistakes, they will eventually fill the same place in the mental hygiene field as the public health nurse fills today in preventive medicine. Physicians are critical of the work of nurses at times, but this does not discredit the entire nursing profession, nor do some mistakes in social work discredit all social workers.

COURT TESTIMONY

Psychiatric testimony in the court room has been the subject of much criticism. This section of the American Medical Association and a special committee of the American Psychiatric Association have made careful studies and recommendations in the past regarding court testimony. Until these recommendations are seriously considered in court proceedings, little change is to be expected. However, psychiatrists are not the sole offenders in respect to expert testimony. Neurologists are likewise to blame, and other physicians who are not qualified by training to pass as experts not infrequently give so-called expert testimony. It is agreed by those best informed on the subject that no improvement may be expected as the law stands at the present in most states in respect to expert testimony.

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When the time comes that the state, through the court, appoints a committee composed of psychiatrists selected from a list who have proper qualifications, more satisfactory results may be expected.

In one article, psychiatric court testimony is referred to as "jargon." It was pointed out by a journalist writing to the New York *Times*,[6] in defense of psychiatry, that psychiatric terms are not always comprehensible to the layman any more than are the terms of the biologist, the chemist and the surgeon. This fact should not justify the use of the term "jargon" in this connection.

In what light are the foregoing criticisms to be regarded? While those mentioned come from a small number of persons, they no doubt voice the feelings of many more. The titles cited, in which psychiatry is spoken of as bunk, a menace, a legend and a weak sister, suggest bias on the part of these writers, to say the least; but I shall pass over that aspect of the matter. To some extent, these criticisms undoubtedly represent opposition which commonly exists toward unfamiliar teachings. Public education is often an effort to make people do something to which they are either indifferent or opposed. Forcing people to wash milk bottles, remove garbage, etc., makes the public health movement unpopular with some persons; likewise, insistence that the patient discuss unpleasant facts or admit wrong points of view makes mental hygiene unpopular in some quarters. Again, over-enthusiastic promoters who make extravagant claims often make opponents rather than converts to their cause.

Some of the criticisms outlined are based on the common but mistaken belief that mental disease is always inherited and the expression of a latent mental weakness or instability. This point of view implies that insanity is one disease and brought on by one cause. As a matter of fact, there are many mental diseases variously divided into groups the same as are physical diseases. For purposes of classification, mental diseases are often divided into two main classes: those of organic origin and those for which no organic cause can be found.

Organic conditions, i. e., such as syphilis, acute infectious disease, traumatic brain injuries and arteriosclerosis, and toxic agencies, including alcohol, drugs, etc., exist as causes in slightly over 50 per cent of all cases admitted for the first time to institutions for mental disease. In view of the fact that such well known organic causes are known should not prevention be attempted?

In respect to nonorganic causes, inherent factors are, of course, important, but an inherent tendency toward disease does not imply that its occurrence is inevitable. Those constitutionally predisposed toward tuberculosis have not stood in the way of a tremendous reduction in the death rate from that disease in the past forty years. In mental disease, such factors as an unfavorable environment in early childhood, prolonged mental conflicts, undue repression of emotions and other mental causes may either lead directly to a mental breakdown or prepare the soil for mental disease at a later date.

Again, there are social influences which are harmful to mental health. Such influences as the repressive atmosphere once existing in New England, the refusal to admit mental conflicts or discuss them with any one, the bitter condemnation of minor wrongdoings in oneself or others, or again the complete freedom from restraint as advocated by some after the World War, these trends in society are not conducive to mental life.

Will not mankind be benefited if these unfavorable influences either in the life of the individual or in society are corrected as far as possible through public education by recognized mental hygiene societies rather than permitted to go unchallenged by any authoritative body?

Mental hygiene has attracted much attention to itself in recent years because of the increasing interest of many persons in the functioning of the mind. A discussion of mental mechanisms, an interest in self-analysis or in analyzing other persons, in investigating the working of the mind and in evaluating emotions has taken place in the daily press, in public addresses and elsewhere. Biologists, psychologists, historians and educators, as well as journalists, novelists and public speakers, have expressed themselves on the subject of mental functions. It would be misleading to think that psychiatrists and mental hygienists were the sole originators of this movement as some critics seem to believe. Psychiatry has been known to a mere handful of people until quite recently.

The present age has brought with it complications in society which have resulted in conflicts affecting both classes and individuals. Where these conflicts seem to be of mental origin, they should be investigated and studied just as the causes of physical disease are studied. This point of view has doubtless increased the public's interest in mental hygiene. In taking up this question of mental health, psychiatry is merely paralleling what general medicine has done in public health.

If this movement is not led by responsible leaders, the field will be left open to faddists and fanatics who foist their theories on the public the same as quacks have succeeded in doing at times in the treatment of physical diseases. A moratorium in mental hygiene, as suggested by one of the aforementioned writers, would leave the field open to a group of charlatans.

Books on mental health written by nonmedical persons have a wide circulation. Some titles are as follows: "The Mind in Action," "Lives in the Making," "Use Your Mind," "Straight and Crooked Thinking," "The Jungle of the Mind," "An Alphabet of Attributes" and "Children and Their Parents." Much of the material of these books has been gathered from responsible sources in the mental health field. Books by extremists and faddists purporting to be on mental health would doubtless be much more numerous than they are now if there were no mental hygiene teachings to offset them.

If universal harmony existed in the world today, a mental health program would be superfluous. But more than a fair share of the ills of the world arise from circumstances which might be avoided through fuller understanding by man of his own psychology and mental outlook. Society suffers from mental as well as from physical ills. Some day it may be possible to recognize these unhealthy mental trends more clearly than now.

In the meantime, concrete evidences of lack of satisfactory mental poise on the part of a considerable percentage of the population is seen not only in frank mental disease, but in the neuroses, the psychoneuroses, emotional instability, delinquency, crime, problems in children, maladjustments between married persons and other evidences of lack of sound mental health in various forms. With these conditions

6. Barnes, H. E., in Liberal Viewpoint column, New York World-Telegram, Dec. 5, 1931.

so prevalent, the need of education in the field of mental health should be evident. In fact, the advantages of teaching mental health as a part of all education may be appreciated in the future. Members of the medical profession and others interested in social welfare will render an important service if they not only refrain from ill considered criticism of the mental hygiene movement, but lend their support to recognized mental agencies.

ABSTRACT OF DISCUSSION

Dr. H. Douglas Singer, Chicago: I think that one can get somewhat unduly alarmed by the facts of criticism. It seems to me that criticism is a healthy sign. It means at least that something is stirring. I wonder whether the criticisms that were offered in the address by the chairman do not follow similar lines. Investigations in medical schools point out the lack of properly trained personnel even in the field of psychiatry itself. If one adds that the whole subject has been, as Dr. Brown said, a sort of foreign body, isolated as Dr. Ebaugh said, one can readily understand the reason for these recurring criticisms. I think that the answer is that those who are interested in this field should do some real work rather than writing quite as much as they tend to do. If psychiatry is taught as it should be taught in every medical school there will be no more of this type of criticism.

Dr. George W. Hall, Chicago: I was pleased to note the broad view that the author took in the presentation of his subject. One must expect criticism in whatever field one may be working in, especially if the views one expresses are in advance of those to which the public are accustomed. That should not be discouraging, however. The subject of mental hygiene, as has been the case with many other topics of medicine, necessarily must undergo the acid test before it is recognized as one of the essential topics that have to do with the dealing of the mental side of patients. There is no question, however, about the foundation on which it is placed, and the future development will eventually present itself in a more crystallized form. I think that if the author's views could be followed out in the way in which he has outlined, by accepting the experience of the psychiatrist and the neurologist rather than placing it primarily in the hands of individuals who have not had medical training, it will reap more definite results than by training individuals to be psychoanalysts who have not had sufficient experience in the basic elements of neurology and psychiatry.

Dr. George Stevenson, New York: In the past week criticisms have come to me in two different cities. They were particularly concerned with the relations between pediatrics and psychiatry, and particularly pediatrics and child guidance. From this criticism it is evident that these issues are straw men that have been set up by some one poorly acquainted with what is going on. In other words, in my contacts with people in the child guidance field the general point of view is that the psychiatrist in child guidance should be handling the more complex problem children, and that the pediatrician and the general practitioner, who sees the child in all his health relationships, should be the first line of defense. That, I think is the prevalent point of view of psychiatrists in child guidance work, but it is also their point of view that pediatricians and general practitioners should be trained to carry that responsibility which they cannot escape. The essential point I want to bring out is that there have been straw men set up creating an issue between pediatrics and child guidance or psychiatry, and between general medicine and psychiatry, whereas there is no real issue between the leaders in those two fields. The apparent issue, if it is studied, grows out of the gropings and defenses of those who are not in contact with one another. One finds exactly the same thing in the relationship between child guidance and public schools. In response to a point brought out in the discussion, I should say that it is far more dangerous to assume to prepare young physicians and young nurses to deal with patients and train them to deal with only organs than it is to prepare the certain special group referred to go into the home in order to make an objective study of it and to carry treatment into that situation. One of the examples of criticism which Dr. Brown brought up is particularly interesting if it is looked at as a psychiatric problem. Here is the director of a social agency. He has created this agency and is the founder of his movement. In founding the movement, as is the case with many founders, he thought it would be a cure-all, a thing that would deal with the delinquent boy, the maladjusted boy, a thing that was entirely sufficient in itself. But this doesn't turn out to be the case. This child guidance clinic comes along and attempts to add to what he has done. It recognizes the value of the job he has done. It recognizes its defects and attempts to deal with them, but this individual is dissatisfied because his baby is defective and he must make it appear to be absolutely whole by pronouncing the lack of necessity of this other child guidance procedure.

Dr. Sanger Brown II, Albany, N. Y.: In the next twenty years, society will do much toward the prevention of mental disease. There has been wide interest in the early treatment of mental disease and there will be full developments of this movement in the future. There need be no fear from the criticisms that have been cited, if this movement is kept under the general direction of the medical profession. Mental hygiene teachings are being attempted in universities, colleges and elsewhere, but unless these teachings are guided by physicians and others familiar with mental hygiene, mistakes are liable to result.

A BIOLOGIC CONCEPT OF DISEASE

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The more one sees of chronic disease the more keenly one appreciates that what has been observed are not sharply defined genera but transitions of morbid states from one to another. One realizes that much of the differentiation that has resulted from more refined observation and more detailed laboratory investigation has tended to confuse rather than to simplify the issue and has caused the classification of disease to be more artificial than biologic. Too often diseases are classified according to a mere grouping of signs and symptoms, rather than in relation to a precise etiology or a well observed consistent pathogenesis. Many chronic diseases, like biologic species, present an evolution from the primitive or embryonic to a full-fledged form. It would be just as consistent to classify the earliest, the intermediate and the final phases of disease as separate entities as it would be to classify the tadpole and the frog as different species.

Most of the confusion in classifying disease comes from an ignorance of the causes of disease. As long as the cause of many chronic maladies is unknown, so long will one be forced to classify disease on the basis of clinical differentials. This does not mean, however, that mere modifications of disease processes require separate classification. Time and again conditions that are regarded as separate disease entities eventually prove to be only biologic sports or mutations.

It is not generally realized that those whose entire medical experience centers in hospitals and consultation work see only a small cross section, usually the terminal one of the disease. Of the previous life cycle of the disorder they are ignorant; at best the previous cycle may sometimes be painfully reconstructed. To be able to follow a malady from the beginning to the end is the special privilege of the practitioner, and the problem of unraveling the evolution of morbid processes is his. MacKenzie recognized this a decade or more ago, and the institute in St. Andrews, in which the very begin-

Read before the Greater Boston Medical Society, Boston, March 1, 1932.

nings of disease are studied, is the outcome of his reflections.

In the absence of a knowledge of etiology, one of the best bases for the classification of chronic disease is a uniform and consistent pathogenesis. One may even be unaware of the precise progress of events, of a correct teleologic interpretation, but one is safe in saying that maladies that have the same pathogenesis are usually intimately related. At the outset, therefore, diseases may be classified into two great divisions. Those which have a well established pathogenesis possess the dignity of a distinct genus or disease; those which have been classified on the basis of a mere grouping of clinical phenomena are syndromes.

This question of evolution of morbid states is not merely a matter of correct interpretation. Current statistics on nosology lose much of their entire significance, or even all of it, because the recording clinician did not note in what phase of the process the symptom or sign occurred. It is like trying to correlate a number of unrelated variables.

Studies in this direction will tend not to split up disease complexes, as was so commonly done in the past, but to unify them. In order to show how a biologic approach to the study of classification should be made, I shall submit a number of rather common instances in which the evolution of pathologic conditions is exemplified.

FIVE INSTANCES EXEMPLIFYING THE EVOLUTION OF PATHOLOGIC CONDITIONS

1. *Hypertensive Disease.*—Most physicians can recall time honored teaching in which renal conditions "caused" hypertension: the large red kidney, the small red kidney, the large white kidney, the small and large granular kidneys and the contracted kidneys of different sizes and hues. These supposedly different species of renal disease associated with hypertension are now known to fall into two groups, each with its own distinct pathogenesis: arteriocapillary fibrosis and glomerulonephritides.

A. Arteriocapillary Fibrosis: It has become manifest that the arteriocapillary fibroses are not the cause but the results of the hypertension, and the supposedly different kinds of kidney represent phases of a pathogenesis in which the earliest is represented by a kidney with minimal vascular lesions and the final the small scarred, contracted kidney; only the latter is a final result. The entire pathogenesis is perfectly explainable on the basis of vascular damage, and the kidney found post mortem represents, therefore, only the localized expression of a generalized arteriosclerosis of the greater circulation. It must be remembered that the patient usually dies, not directly from the renal damage but from a vascular or circulatory crisis, and the state of the kidney depends on the period of the disease in which the crisis occurred. "Nephritis" and the arteriosclerosis have no mutual reactions on each other but are the simultaneous reactions to the same insult, namely, hypertension. In the evolution of hypertensive disease the renal disorder represents only a small part of the clinical picture, the brunt falling on such organs as are more profoundly affected by the arteriosclerotic change. Chart 1 summarizes all the possible eventualities.

Why the brunt of the disease should fall on one organ more than on the other is an intriguing problem, but this conception explains why various combinations of clinical manifestations are often possible with hypertensive disease. In other words, here are a great number of clinical products the embryonic stage of which is a pure functional derangement; namely, hypertension. It is only necessary to add, in order to avoid misinterpretation, that these final products are perfectly possible without hypertension. I have shown that arteriosclerosis is the result of the normal intravascular pressure and is due to no other factor; hypertension simply brings about the vascular changes earlier and in a more intensified degree than the normal involution.

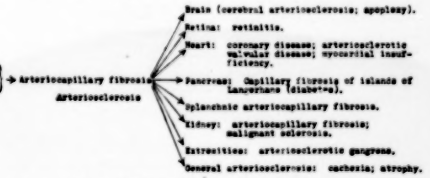

Chart 1.—Eventualities possible in hypertension.

B. Glomerulonephritis: I[1] have called attention to the interesting natural history of glomerulonephritis. If patients with this disease are studied over a period of years, the following eventualities may occur:

(*a*) Complete clinical and anatomic recovery.

(*b*) Recovery from the acute phase; persistence of albuminuria for a period of a few months to many years; progression of lesion with recurrence of hypertension, arteriosclerosis, death in uremia or from myocardial failure with the clinical picture of malignant sclerosis.

(*c*) Recovery from acute phase; persistence of albuminuria, which is frequently orthostatic in type for many months; recovery.

(*d*) Acute glomerulonephritis; death in acute myocardial failure.

(*e*) Acute glomerulonephritis; persistence of excessive albuminuria resulting in a transition to the nephrotic phase; death from uremia or myocardial insufficiency.

I have not observed a complete clinical recovery with a recurrence many years later. As far as my experience is concerned there is either complete recovery or some evidence of clinical continuity. Without knowing

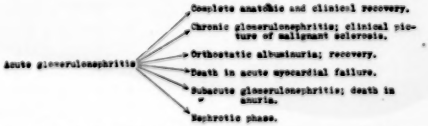
Acute glomerulonephritis
Complete anatomic and clinical recovery.
Chronic glomerulonephritis; clinical picture of malignant sclerosis.
Orthostatic albuminuria; recovery.
Death in acute myocardial failure.
Subacute glomerulonephritis; death in anuria.
Nephrotic phase.

Chart 2.—Eventualities possible in acute glomerulonephritis.

what has gone before, it is sometimes impossible to determine, when the clinical picture of malignant sclerosis arises, whether the disease began as an essential hypertension or as a glomerulonephritis. The same problem arises in the interpretation of the origin of the nephrotic syndrome.

2. *Nephrosis.*— In a previous paper[2] I have discussed the validity of nephrosis as a definite disease concept and tried to show that it has no single etiology or definite background in pathology. In Mount Sinai

1. Moschcowitz, Eli: New England J. Med. **202**: 320 (Oct.) 1930.
2. Moschcowitz, Eli: Am. J. M. Sc. **172**: 469 (Oct.) 1926.

Hospital the clinical nephrotic picture as described by Epstein and others has been associated with four different lesions: lipoid degeneration, chronic parenchymatous nephritis, amyloid disease and subacute or chronic glomerulonephritis. In other words, nephrosis is not a disease but a syndrome with fairly well defined characters, the prominent evidences of which are fairly uniform blood chemistry and edema.

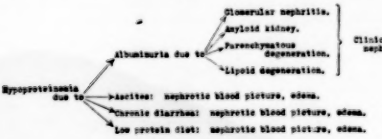

Chart 3.—Relations of nephrosis.

The hypothesis of Epstein,[3] who believed that the clinical manifestations of the disease were due to loss of protein, has been to a large extent confirmed by Leiter,[4] who proved that plasmapheresis in animals produced a clinical picture that simulated closely that of nephrosis in man. A nephrotic blood picture is also noted in loss of protein within the body itself, as in ascites. This is not the place to enter into the interpretation of the various clinical phenomena of nephrosis as determined by the loss of protein, but it is pertinent to note that the edema, perhaps the most constant of all the evidences of nephrosis, is perfectly explainable on the principle of the law of Starling, who found that the exchange of fluid between the blood vessels and the tissues depended on a balance between the hydrostatic pressure within the capillaries and the osmotic colloid pressure of the plasma, which tend to neutralize each other, a law which Epstein brought into his conception. This is important for the explanation of the mystery of the edema noted on the continent during the war, where the diminution of protein was due to insufficient protein intake, and the edemas noted in the chronic diarrheas. The cause of a primary nephrosis, which Epstein described as "diabetes albuminuricus" and which often results in recovery under an appropriate diet, is still unknown. It is possible that the lipoid and parenchymatous renal lesions may be the result of an unknown primary disorder of metabolism. The amyloid kidney and the chronic glomerulonephritis are undoubtedly primary. Biologically speaking, therefore, nephrosis is only a syndrome and not a disease, and any discussion of the subject is well nigh valueless unless its origin is known.

3. *The Evolution of Hypertension of the Pulmonary Circuit.*—Hypertension of the pulmonary circuit leads to pathologic changes which are comparable in every detail to those consequent on hypertension in the greater circulation, the one large difference being that, owing to the blood supply, only two organs, the lungs and the heart, are directly affected, the other organs of the body being affected only secondarily. It is important to recognize that the two circulations are entirely independent as far as the incidence of the hypertension is concerned, and that the dominating lesion of hypertension of the pulmonary circuit is arteriosclerosis of the pulmonary arteries. The changes in the lung are comprised under the generic term arteriocapillary fibrosis, and the lesions are morphologically identical with those seen in the kidney in hypertension of the greater circulation. In other words, although the pressure cannot be measured in the pulmonary circuit, the presence of arteriosclerosis of the pulmonary vessels proves at once that a persistent hypertension of this circulation has been present. The cause of the pulmonary hypertension is always mechanical and in the order of frequency are the following: mitral disease, especially mitral stenosis, emphysema, long standing failure of the left heart; marked diminutions in pulmonary volume (e. g., chronic pulmonary tuberculosis) open ductus botalli, kyphoscoliosis, and communications between the right and left hearts. Schematically the evolution of hypertension of the pulmonary circuit may be represented as in chart 4.

It is evident that the evolution of the various fundamental diseases causing hypertension of the pulmonary circuit covers a broad range both clinically and pathologically. The life cycle is a long one and it is therefore highly important for clinical purposes to recognize in what stage of the evolution the disease process lies.

4. *Exophthalmic Goiter.*—This comprises a series of clinical disorders, the earliest of which have been represented under such various terms as autonomic unbalance, neurocirculatory asthenia and basedoid. The intermediate phases have been described under the generic heading of formes frustes, while the final phases, known conventionally as Graves' disease, with the quadrad of symptoms, tremor, enlarged thyroid gland, tachycardia, and increased basal metabolism, represent the fully developed clinical expression of the disease. Occasionally one has the privilege of observing these various phases passing into each other, both in a forward and in a backward direction, and the common denominator which brings unity to the clinical concept is a characteristic constitution, partly anatomic but mostly psychologic, which persists as a residue no matter what form of treatment is undertaken.

1. Mitral stenosis (rheumatic or arteriosclerotic).
2. Emphysema (senile or asthmatic).
3. Long-standing left heart failure.
4. Diminution in lung capacity (chronic tuberculosis, tumors).
5. Kyphoscoliosis.
6. Open ductus botalli.
7. Communications between right and left hearts.
Hypertension of the pulmonary circulation
Arteriosclerosis of pulmonary arteries.
Pulmonary arteriocapillary fibrosis.
Right heart failure.
Pulmonic insufficiency.
Pulmonic infarction.
Passive congestion of the liver (cardiac cirrhosis)
Passive congestion of the spleen.
Passive congestion of kidneys.

Chart 4.—Evolution of hypertension of the pulmonary circuit.

If the disease is not arrested, various eventualities may arise. First, the persistent tachycardia may lead to myocardial insufficiency. This may result in a number of ways; either directly through the persistence of the tachycardia, through the intermediary stage of an arrhythmia, usually auricular fibrillation or, finally, through the increase and persistence of the usual hypertension that is associated with the tachycardia of exophthalmic goiter. This hypertension in turn may bring about the changes in the greater circulation which have already been discussed. I have seen a number of such evolutions. All in all, the cardiac phase of persistent

3. Epstein, A. A.: The Nature and Treatment of Chronic Parenchymatous Nephritis (Nephrosis), J. A. M. A. **69**: 444 (Aug. 11) 1917.
4. Leiter, Louis: Proc. Soc. Exper. Biol. & Med. **26**: 173 (Nov.) 1928.

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exophthalmic goiter may be so prominent clinically that the conventional evidences of the exophthalmic goiter appear submerged and it is only by careful reconstruction of the patient's previous course that the true origin of the cardiac phenomena may be determined. The second and, fortunately, less frequent eventuality is the transition to acute thyrotoxicosis and death. The scheme for the evolution in exophthalmic goiter may be represented as in chart 5.

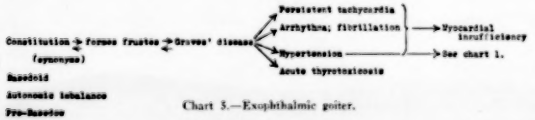

Chart 5.—Exophthalmic goiter.

5. *Toxic Hepatitis.*—This term covers disorders previously known under the names of catarrhal icterus and acute yellow atrophy. These maladies had always been regarded as separate diseases, the main difference being that in the first the patient recovered and in the second the patient died. Since, however, clinically indubitable cases of catarrhal icterus showed lesions of the liver closely resembling those of acute yellow atrophy [3] and, furthermore, since the clinical transition of undoubted catarrhal icterus into equally undoubted acute yellow atrophy is not infrequently seen, it is strongly probable that the two diseases are identical, varying only in intensity. The distinction between the two diseases is no longer a question of the survival of the patient, for it has become clear that patients even with what appears clinically to be acute yellow atrophy recover from the acute phases, the proof being that such patients who happen to come to autopsy reveal profound cirrhotic and compensatory changes that could have come only through a profound and diffuse destructive hepatic damage. Some observers, such as Eppinger, are willing to go so far as to say that the large group of diseases covered under the term splenomegalic biliary cirrhosis arises from a previous clinically severe toxic hepatitis; but as far as I am aware, nobody has yet observed this transition. In passing, the follow up of various forms of destructive liver disease over long periods is something greatly

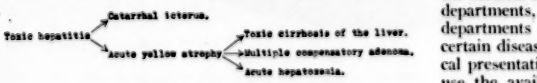

Chart 6.—Toxic hepatitis.

to be desired: physicians are still unaware of the early phases of such rare hepatic diseases as splenomegalic biliary cirrhosis, Banti's syndrome and Hanot's cirrhosis.

COMMENT

I have cited only a few evidences of the evolution of common diseases with which I happen to be somewhat familiar. There are many others, especially of the rarer varieties, that could be cited. For instance, all evidence points to the fact that diseases associated with a disturbance of the lipoid metabolism, such as amaurotic family idiocy, Niemann-Pick disease, Schüller's disease and the Christian syndrome, are closely related and may even be transmuted from one into the other. In blood diseases, the various forms of agranulocytosis are not sharply defined conditions but represent different reactions between the host and the infection. The aplastic anemias represent end products from exhaustion of the bone marrow due to a different previous disease of the blood-forming organs.

The important point in this brief summary is to call attention to the value of the biologic assay in evaluating disease and to the necessity for studying its evolution over more extensive periods than have hitherto been customary. Unfortunately, the number of diseases in which there are positive criteria or tests for diagnosis, such as the finding of the tubercle bacillus, are limited. For the others, until either a definite cause or a definite pathogenesis has been discovered, the only way to reach an understanding of the disease is by studying its evolution, both clinically and anatomically. Such a study, moreover, is necessary in order to determine the etiology of certain obscure conditions of a long life cycle. What, for instance, is the earliest phase of the leukemias? of pernicious anemia? of Gaucher's disease? of primary polycythemia? The determination of such origins may furnish an important clue to their causes.

25 West Sixty-Eighth Street.

3. Klemperer, P.; Killian, J. A., and Heyd, C. G.: The Pathology of "Icterus Catarrhalis," Arch. Path. 2:631 (Nov.) 1926.

THE CLINICAL TEACHING OF PREVENTIVE MEDICINE

DWIGHT O'HARA, M.D.
Professor of Preventive Medicine, Tufts College Medical School
BOSTON

The most groping field in the medical curriculum today is that in which we are trying to color the teaching of the practice of medicine with a preventive tinge. The attempt is being made in various ways in various places. Dr. Rosenau, at Harvard, has for several years been conducting amphitheater demonstrations in which the sick man may be made the beginning of a clinical discussion of the hygienic, epidemiologic and public health aspects of disease. Dr. Leathers, at Vanderbilt, has established a fine cooperation between the medical school and the state, county and city health departments, as well as between his own and the other departments of the school, in which the prevention of certain diseases is included in their pathologic and clinical presentations. So we find ourselves, each trying to use the available facilities toward the same end, but each being routed over a somewhat different road, with a different type of car and with by no means the same supplies of oil and gasoline. If here, at the crossroads, we can exchange a word or two descriptive of the scenery that we have been encountering, it may be helpful in deciding where the main and super highways should be built.

A plan which we are developing at Tufts College Medical School differs in some respects from other methods that have been devised. Since 1928, fourth year students have been engaged in the home care of patients under the supervision of graduate instructors in the district service of the Boston Dispensary. This service, the application of which to the teaching of medi-

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cine has been described by Dr. Joseph H. Pratt,[1] provides in a unique way the chance to point out preventive opportunities under the circumstances that confront the practicing physician. The student calls on sick people in their homes every day, and they, his own patients, are used as clinical material. During the past year, while on this service, each fourth year student has attended a series of sixteen conferences. These amplify Dr. Pratt's regular conferences on the practice of medicine and have been largely conducted by Dr. Samuel H. Proger. In them we have tried to do two things: first, to interest the student in the social aspects of disease, and second, to bring him into contact with suitable opportunities to institute preventive measures. The actual circumstances of a case in the district are assigned to be investigated and reported on, together with collateral reading assignments. The prevention or amelioration of an attack of measles, for example, may be discussed in terms of the exposure of a certain family, individual members of which may be known to be tuberculous or otherwise vulnerable. On an examination at the end of the district service each student is asked to discuss the preventive aspects of some particular case that he has seen during the preceding months.

In most of this work we are dealing with the problems of the individual, and concern ourselves with such things as the sanitary features of water, milk or food supplies only when they threaten the welfare of the individual. The environmental factors that favor various diseases and their treatment are analyzed, and an attempt is made to present the available community resources which support, in private practice, the necessary therapeutic or protective treatment. Not only the available resources of the large city but their counterparts in smaller communities are considered, down to the point of unorganized practical neighborliness, which seems to exist in inverse ratio to the population in the country. Thus the student is brought to see his future place in community life and the part that he, as a physician, may be expected to weave in the social fabric.

Tufts Medical School has a particular interest in the provincial problems of New England. We, therefore, consume little time with hookworm disease, malaria or tropical medicine. Smallpox, diphtheria and typhoid fever, on the other hand, are important diseases. While these three diseases are preventable and generally well controlled, they are a potential menace at all times, and we use them as the great examples of actual accomplishment. There is a frontier in preventive medicine, behind which the control of certain diseases is a matter of custom or statutory regulation. These three diseases fall into the group behind this frontier. In Massachusetts vaccination against smallpox is required of all public school children. School age has thus come to be the traditional age for vaccination, and practitioners' offices are filled with 4 year olds during the late summer and fall of every year. We can point out that vaccination between the ages of 2 and 6 months is simpler and safer and provides a larger measure of community protection than the present custom. This brings to the student's attention a large group of unvaccinated persons—a surprisingly large number when a student begins to count them on his daily rounds.

This is also the group of persons who are most susceptible to diphtheria. In Boston, for several years, the custom has been to make a mass appeal for diphtheria immunization to the parents of children in their first year of school. Last summer Dr. S. H. Rubin appealed to the doctors and the parents of the preschool children to have, among other things, their toxin-antitoxin or toxoid inoculations attended to before school opened. The next and last step will obviously be to urge diphtheria immunization for all children at the age of 6 months. It is easy for our students to see how they, the family doctors of the district, are the logical ones to take this step, and a few have actually fared forth on such missions, although it was not required of them. Had such a custom been prevalent in Massachusetts during the past decade, 2,381 cases of diphtheria and 130 deaths might have been averted in the year 1931. Here, then, are specific procedures that can be advocated.

1. Pratt, J. H.: New Features in Clinical Teaching, New England J. Med. 203:1 (July 3) 1930.

SCARLET FEVER

We are next forced to take a stand of some sort on controversial subjects, the major one at the present time being the prevention of scarlet fever. Six years ago, when scarlet fever knocked at the door of preventable diseases, asking to be admitted on the basis of antitoxic immunity, we were inclined to accept her, provided she could hide her scarlet past. But even though scarlet fever may take off her rouge, change her name and never walk the streets again, closer acquaintance leads us to doubt the respectability of her associates, the hemolytic streptococci. In learning to cope with the toxin of the diphtheria bacillus, we conquered that disease. Not so, however, with the toxin of scarlet fever streptococci; one may immunize against it all one pleases, but the causative organism remains, a streptococcus just the same. In a personal observation of perhaps 500 cases of scarlet fever I have seen but 1 patient who died of primary toxemia. We are inclined to look on the prevention of the primary toxic manifestations of scarlet fever as a luxury, and to instruct our students not from the recent published material on the subject, but in terms of what they actually encounter in the district and will, of course, later encounter in practice.

There has been no difficulty this year in finding available material for such instruction. The following, for instance, is taken from a student's report to the conference, February 6, on a family of nine:

> Thursday, January 27, Patrick, aged 4 years, developed a sore throat and fever and vomited once. During that time he continued to play with his brothers and sisters. On the following day his mother noticed a generalized rash, and on the same day Joseph, aged 9, who had had scarlet fever before, developed a severe tonsillitis and pharyngitis, his throat appearing much like Patrick's. On Saturday, two days after the onset, Dr. Olef was called and diagnosed Patrick's case as one of scarlet fever, and Joseph's case as tonsillitis and pharyngitis. In the two day interval between Saturday and the preceding Thursday, those children who attended school continued to do so. On February 3, Rosemary, who had had scarlet fever, developed an acute follicular tonsillitis, pharyngitis and cervical adenitis, with a temperature of 101.4 F. (oral) but no rash.
>
> This family of nine people live in but four rooms, two of which are set aside as bedrooms and contain one double-sized bed each. One of the bedrooms is adjacent to the kitchen. The other is separated from the kitchen by the dining room, so called, in which there is also a couch. When there is no illness, Mr. and Mrs. King, Patrick (the patient with scarlet fever) and Timothy, the baby, sleep together. They were all sleeping together when Patrick became sick. Why Timothy, who is only 2 years old, has not shown scarlatinal manifestations is perplexing. (Timothy did contract scarlet

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fever on February 7, the day after this report was made.) Joseph, with his tonsillitis, was sleeping with three other members of the family. Since Patrick and Joseph became ill, things are arranged differently. Mrs. King sleeps with Patrick in the bedroom farthest from the kitchen, and Mr. King has been sleeping with Joseph on the couch. The remaining five children slept in the other bed, Rosemary, who has since become ill, among them. When she became ill, I tried to persuade Mrs. King to isolate her from the other children. She promised to do so, but when visited on the following day, Rosemary still occupied the same place in the back bedroom. When asked about it, Mrs. King explained that the family was receiving aid from the welfare society in return for some work that her husband was doing, and that she could better afford to have the children sick than her husband.

Such a case illustrates that the challenge of scarlet fever is not that of its harmless rash, but the larger challenge of the hemolytic streptococci. While these have been classified under such terms as Streptococcus erysipelatis, Streptococcus scarlatinae and Streptococcus epidemicus, one is tempted to philosophize and compare them to groups of persons—musicians, for instance. Some are pianists; others are violinists; still others perform on the piccolo. There is a discipline in the concert hall of the laboratory, where one is apt to find each artist playing his own instrument, but at home in the cool of the evening the clinician will sometimes catch the piccolo player with a trombone—and booming out a very good tune with it, at that! For the fourth year student such circumstances as these constitute a glimpse behind the scenes of the modern contagious hospital and show him how relative the isolation of contagious diseases often is in the community.

TUBERCULOSIS

Tuberculosis is, of course, one of our great problems. Tuberculosis is a disease, the prevention of which is a matter of understanding and optimism. After calling on a patient and studying his environment one of our students reacted as follows, in summarizing his report:

As institutional care has been refused and cooperation is impossible and not agreeable to the patient, there is dying on Decatur Street a 16 year old youth who has no right to, had the case been handled right from the start. It is better to call the patient dead and to concentrate on his brothers and sisters. This is being done through the East Boston George White Health Unit and the schools. These youngsters report at regular intervals to the clinic, and a thorough check-up of the child by physical examination, roentgenogram and tuberculin test is obtained, along with a careful home and food history.

Let a doctor react in this way and at the same time be interested in individuals and one may be sure that he is doing his part in the fight against tuberculosis.

RHEUMATIC FEVER

On the seaboard, north of 40 degrees, as might be expected we are interested in the disease for which we can do the least: rheumatic fever, in its many manifestations and with its many tragic results. From our confused knowledge of rheumatic fever we grasp at the two straws that may possibly provide encouragement. The first of these is the conception that active rheumatic manifestations are responses on the part of the body to an engagement with the hemolytic streptococci. One has but to have this conception in mind to see it frequently exemplified in practice. For example, there is the notorious association of acute rheumatic fever with attacks of follicular tonsillitis, or the following situation, which was observed this year: A family of three children had all had scarlet fever and none of them had had serum treatment. Four weeks later one of them was suddenly stricken with fever and red, hot, tender, swollen joints. Was this a coincidence of rheumatic and scarlet fever, or could these have been two phases of the same episode? This question is asked rhetorically under these circumstances.

The other encouraging straw about rheumatic fever is the geographic variation in the incidence of rheumatic heart disease. A member of our department who went to medical school in Georgia likes to tell us of the discussion that centered about a case of heart disease in Atlanta—as to whether it was rheumatic or congenital heart disease. I believe the latter was decided on on the grounds of its greater prevalence!

This year we were fortunate in having Dr. Coburn accept an invitation to come from New York and give a lecture on the clinical and anatomic findings in fulminating rheumatism. We make no pretense of teaching the prevention of rheumatic fever, but we believe that an interest in the unsolved problems is quite as worth while as a recital of accomplished facts.

The more one explores it, the larger the field of clinical preventive medicine appears to be. I have touched on only the aspects of a few infectious diseases. There are many others. It would be fatuous to say that one can prevent the so-called degenerative diseases, and yet the treatment of some of them would seem to be the actual prevention of others. Thus, in middle age, obesity is the fibrinogen of diabetes and, to a lesser degree, of heart disease; once developed, diabetes is in turn precursory to arteriosclerosis and arteriolosclerosis, while in the background of all these are the various phases of the condition called hypertension. Here the therapeutic and preventive considerations merge together and make preventive medicine a mere point of view in the larger subject of clinical medicine.

SUMMARY

The fourth year teaching of preventive medicine at Tufts College Medical School is presented. Patients sick in their homes and cared for by the fourth year students, under supervision, are used as clinical material. The students have conferences with clinicians who are interested but not specifically trained in the science of public health. The opportunities for and the limitation of preventive measures are thus pointed out under the actual circumstances that confront the practicing physician. A few specific situations are discussed.

ABSTRACT OF DISCUSSION

DR. W. H. PERKINS, New Orleans: The use of the term "preventive medicine" has broadened in its general scope and has carried us back to the problem of the individual. Tremendous strides have taken place in prevention, but I believe that little further advance is possible in many of these efforts without the point of view which Dr. O'Hara has stressed. I am interested in the efforts that are being made in the different schools of this country to bring over Sir George Newman's dictum of "permeation of the entire curriculum with the preventive idea." Dr. O'Hara has shown us the light in one phase of this problem. It is excellent that the course which he has shown links up so closely with the medical department and uses much of its physical set-up. By taking the student into the domiciliary treatment and observation of his patients, a quicker revival of the family physician may be hoped for. Dr. O'Hara mentioned another thing. He is attempting to drive home to the students the necessity of seeking for more knowledge in order that the chain on many of these disease conditions

which have a perfectly developing natural history may be cut. They have vulnerable points and any attack on those vulnerable points is really prevention. Those of us working in the broader aspect of public health welcome every possible effort to increase the student's conception of prevention. We hope that he may look on prevention with a broader vision than is shown in the textbooks. The other advantage of Dr. O'Hara's proposition is that the student gets into the home and thereby learns to send in good reports, which are the public health worker's medium of increasing his efforts. He is also looking in retrospect on the patient, wondering what could have been done to prevent the present condition, much as Dr. Leathers is doing at Vanderbilt. The effort of Dr. O'Hara and Dr. Pratt at Tufts is a step forward. Other solutions are certain to appear. I hope that papers on this aspect of prevention may continue to appear in the program.

DR. J. E. GORDON, Detroit: The desirable correlation of clinical and preventive medicine is best developed in the education of the undergraduate medical student. Some stimulus must, however, be given the physician now actively in practice; otherwise the well instructed recent graduate may enter the larger professional group and there find his enthusiasm dulled by a general apathy toward preventive medicine. In the symposium of yesterday, in the joint meeting with the Section on Practice of Medicine, the observation was made that often the public is better instructed in recent developments of preventive medicine than the physician himself. In the attempt to interest actively practicing physicians in preventive medicine, the method too often is limited to dissemination of pamphlets, literature and lectures. I believe the graduate physician can obtain more benefit from actual demonstration of the related interests of clinical and preventive medicine, and of the possibilities of that correlation as it affects his individual private practice. In developing this idea, a series of clinical conferences was started in Detroit some years ago, to which all physicians were invited. The communicable diseases were selected as the subject best fitted for that demonstration. Twelve physicians attended the first meeting. In the course of three years that number has increased to as many as 382 physicians who attend these conferences at 10 o'clock each Wednesday morning. The clinics are a joint activity of the health department and the county medical society. Thus far communicable diseases, the venereal disease problem and tuberculosis have been discussed, apparently with a threefold result. The number of new cases of communicable disease has been limited by emphasis on preventive measures. Benefit has accrued to the patient ill with an infectious disease, through demonstration of present-day methods of diagnosis and treatment. Thus the effort toward lowered mortality has been directed not only to limitation of the number of cases, but to better care of patients already ill. Finally, a keener interest in public health problems has resulted from these conferences, as illustrated by the cooperative plans for diphtheria immunization and tuberculosis study presented in the scientific exhibit of this section. This has led to better case finding of communicable disease and I think better reporting of such conditions.

The Love of a Theory.—In rare instances the practicing physician becomes the creative scientist. His imagination conceives of an hypothesis, based on frequent, accurate, well controlled observation. This hypothesis is put repeatedly and rigidly to the test by carefully planned, albeit simple experiments on the human being. Many of the experiments of Harvey, the discovery of Jenner and the work of Laënnec were of this type. But science, for most men, does not progress much beyond the descriptive method, and knowledge is sought and obtained by accurate observations of natural phenomena, recorded with meticulous care, collected, compared, controlled by further observations, subjected to critical analysis, and finally brought to a conclusion uninfluenced by desire or theory. This method results in what is commonly known as experience, a word interpreted in the Middle ages as signifying experiment, and used today by the French to describe experiment. But at times, in experience and during experiments, desire warps judgment, and the love of a theory leads to disaster.—Longcope, W. T.: Methods and Medicine, *Bull. Johns Hopkins Hosp.* **50**:4 (Jan.) 1932.

RELATION OF PRIVATE MEDICAL PRACTICE TO PUBLIC HEALTH IN EUROPE

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The relationship of the doctor to the public health is of the most vital concern at the present time; vital to society because national vitality is conserved and increased by adequate medical care; vital to the doctor because his professional welfare, his economic position and his personal well-being depend largely on the nature of that relationship. No one here would deny that the rights of society come first, the whole being greater than any of its parts. Nevertheless, society, in its own interest, owes to the doctor the right to practice his profession in conditions which provide for the best treatment for his patients and a position of dignity and of decent living for himself. That the relationship of the doctor to society is not in a satisfactory position must be apparent to the most casual observer. In America there has been set up a Committee on the Costs of Medical Care to inquire into this subject. The belief is general that certain classes of society, even in times of prosperity, are not fully provided with that degree of medical treatment, prophylactic and curative, which the advances of medical science have placed at the disposal of mankind. Large numbers of doctors, potentially capable of supplying such treatment, find themselves with idle hands and empty purses. Patients are unable to pay for adequate medical attention, while many doctors work desperately hard for a mere pittance. In America the cry is that the family doctor is passing away, while in Europe the doctor fears that the private practice of medicine is disappearing. It is obvious that the relationship of the doctor to the public health, to the state and to society is a subject of the greatest current importance and interest.

The increasing difficulty and complexity of that relationship are due, on final analysis, to the advances in medical science. Doctors and their colleagues in the allied sciences, in private practice, in salaried positions and in research laboratories have built up that body of knowledge which, with the growth of civilization, the state attempts to utilize for the public benefit. Advances in medical science have brought about an increasing specialism with its attendant problems. The need is felt for a recasting of the whole scheme of medical education, to endow the doctor with some part of the new body of knowledge and to fit him for proper performance of his public duty. The practice of medicine has long ceased to be a matter affecting only the doctor and his patient. It has become the concern of the state, which may adopt a policy of noninterference when all goes well, but which must take a hand when deficiencies of method or inequalities of application affect the public welfare.

POLICY OF EUROPEAN GOVERNMENTS REGARDING MEDICAL TREATMENT

Any student of public health and medical work in Europe must be struck with the importance which governments and the public attach to the liberal provision of medical treatment. The practice of medicine, or the adequate treatment of the sick, is considered to be the

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foundation on which rests the whole structure of public health work. Newman [1] spoke of the medical practitioner as our "first line of defense against disease." Such a potentially capable agent of society "cannot escape definite relationship with the existing system of public medical responsibility or fail to answer to the call of a wider sphere. For in whatever direction we look we find an ever-increasing burden of professional duty imposed upon him, with an ever increasing responsibility to his colleagues and to the state."

Believing that the primary public health problem is the early diagnosis and proper treatment of disease, European governments have adopted and enforced legislation for the public provision of medical treatment which has brought the doctor into a new and important relationship with the government. This tendency has its roots in the past. Beginning with the provision of casual medical relief for the destitute, it has developed and extended until a wide variety of medical treatment is offered freely to the public. The lesson that sickness is a disaster to the weaker classes of society, involving them in social and financial difficulties which the state ultimately will have to relieve, has been paid for dearly and is now fully appreciated.

PROVISION OF MEDICAL ASSISTANCE BY MEANS OF SICKNESS INSURANCE SCHEMES

If European governments concern themselves actively in the treatment of the sick, they do so indirectly so far as the largest groups of population are concerned, by means of sickness insurance. Social insurance is at present widely extended in Europe because of the public desire to protect the weaker classes—wage-earners, employees and their dependents—from sickness, invalidity and privation. It is a popular movement which has developed slowly throughout the years. With the growth of representative government and a developing humanitarianism, its pace has become much accelerated, and today sickness and invalidity insurance, its chief manifestations, are found in practically every European country, as well as in a number outside of Europe. Sometimes willingly, often protestingly, the medical practitioner has been drawn into the movement. No opposition offered by the medical profession has succeeded in halting its progress. Nevertheless, the medical provisions of sickness insurance have been modified and bettered at the suggestion of doctors organized into professional groups, and sickness insurance has succeeded best where it has had the loyal cooperation of a strong, highly trained medical profession.

I have stated that sickness insurance is a popular movement and that it is of ancient origin. Taking the Netherlands as an example, one finds that sickness clubs existed there as early as 1603 in connection with the guilds.[2] It had a similar origin in most of the countries in Europe. In its modern form sickness insurance dates back to 1883, when the first act legalizing it was passed in Germany. In the postwar period it took on new life, sweeping across Europe and extending overseas. There are two main forms of sickness insurance, the compulsory and the voluntary. In the compulsory form the law obliges persons following certain occupations or within certain income limits to join a sickness fund. This form is found in Germany, Austria, Hungary, Luxemburg, Norway, Yugoslavia, Great Britain, Russia, Czechoslovakia, Poland, Bulgaria, Portugal, Greece, France, the Netherlands, Chile and Japan.[3] However, the proportion of the population coming under the insurance scheme varies widely in these countries. In the voluntary form, no person is forced to join a sickness fund, but the state usually encourages the funds by various means, such as bonuses in respect of each member. This form is found in the Argentine, Belgium, Denmark, Finland, Spain, Sweden and Switzerland.[4] The tendency is for compulsory to follow voluntary sickness insurance. France is the latest convert to this system. Sickness insurance is only partial in Italy, where it is restricted to tuberculosis. It is but slightly developed in Spain. With these exceptions, it may be said that well developed schemes of sickness insurance are found in every important European country.

The object of sickness insurance is to spread the risk of illness among the socially weaker classes over a sufficiently large group, so that the cessation of earning power and the cost of treatment do not prove disastrous to an individual. The provision of medical treatment is its most important result. As the weaker classes of society are incomparably the most numerous, sickness insurance has inevitably made its influence felt in medical practice. More than three fifths of Germany's total population belong to sick funds or are entitled to medical treatment as the dependents of insured persons; 30,000 doctors, or 80 per cent of the whole number, work for the insurance funds, and for the great majority this work is the principal source of their income.[5] There are approximately 15,000,000 insured persons in Great Britain. Of the 7,600 doctors in Czechoslovakia, about 5,000 work for the sickness funds. Almost exactly half of the population is insured. In 1927, the medical profession received in fees from the sickness funds the sum of 238,000,000 crowns (over $7,000,000).[6] In Denmark over 66 per cent of the entire population between the ages of 14 and 62 belong to sickness funds. Practically the entire wage-earning population of the Netherlands belongs to societies of medical help. About 50 per cent of the wage-earners in Belgium are insured. More than a fourth of the entire population of Hungary belongs to sickness funds; in Budapest the proportion is 80 per cent. As a rule, the insured proportion of the population declines in countries that are predominantly agricultural (Denmark is an exception), so that in Poland the percentage is 16, and in Yugoslavia only 3.5.[7]

The administration of sickness insurance is usually in the hands of sickness funds or societies made up of wage-earners and representatives of the employers. These are autonomous as a rule, state intervention being restricted to a varying degree of administrative and financial supervision. The resources of the funds are obtained by contributions from the members and employers with varying but usually limited financial participation of the state.

The benefits of sickness insurance vary not only from country to country, but also within a country. As a rule there are certain mandatory and a number of permissible benefits, the latter offered at the discretion of the individual funds. There is no legal obligation to give benefits to dependents of the insured, but on the continent the practice is general and is extending rapidly.

1. Newman, George: Quart. Bull. Health Organization, League of Nations, vol. 1, no. 1, 1932, p. 8.
2. Newsholme, Arthur: Prevention and Treatment of Disease, Baltimore, Williams & Wilkins Company, vol. 1, 1932, p. 23.
3. Compulsory Sickness Insurance, International Labor Office, Geneva, Switzerland.
4. Voluntary Sickness Insurance, International Labor Office, Geneva, Switzerland.
5. Goldmann and Grotjahn: Benefits of the German Sickness Insurance System, International Labor Office, Geneva, Switzerland, 1928.
6. Personal communication.
7. These data are taken from Newsholme (footnote 2, vols. 1 and 2).

Sickness insurance benefits are of two kinds: cash and medical, the latter word being used in its broadest sense. The cash benefit, usually amounting to one half of the basic wage, is paid for a varying period, in general about half a year if the illness lasts so long. In Great Britain medical benefit is limited to the treatment which a general medical pactitioner may reasonably be expected to give, but as a rule there is no such limitation on the continent.

Taking Germany as the classic example, the following is a list of the benefits which the insured may receive: [8]

Cash benefits.
Treatment by a general practitioner.
Treatment by specialists.
Hospital treatment.
Treatment in other institutions, such as convalescent homes, establishments for physical therapy and sanatoriums.
Use of such aids to diagnosis as the x-rays and laboratory examinations.
Dental treatment.
Supply of medicines, special drugs and diet, medical and surgical appliances.
Payment of allowance to the expectant mother and antenatal medical supervision.
Provision for attendance of midwife or doctor on confinement; care in maternity home if necessary.
Provision for after-care of mother and baby, including cash benefits; nursing benefit, to enable her to nurse her baby; proper food and, if necessary, treatment in a convalescent home.
Domestic help for mothers during confinement.

This is a summary list of the benefits accruing to the insured. It is not exhaustive. The dependents of insured persons receive most of these benefits, although benefits in cash are not paid to dependents. In 1925, more than 850,000 mothers in Germany received benefits on a more or less extensive scale from the various sickness funds, which contributed toward the expenses of nearly two thirds of the total births.

In providing the opportunity of complete medical treatment to such large groups, sickness insurance has become the main support of hospitals and other medical institutions, and has subsidized many forms of health work. In many European countries it determines the amount of the doctors' earnings and influences their distribution, so that an international conference on rural hygiene, convened last year by the League of Nations, decided that the best way to insure a sufficient supply of doctors in rural districts was to bring all agricultural workers within its scope.[8]

The contributions of sickness insurance are: social, preventing the disintegration of the family while the wage-earner is incapacitated; medical, providing the treatment necessary to restore health and working capacity, and prophylactic, which in addition to adequate medical treatment includes rest for the expectant mother before and after confinement, encouragement for her to nurse her baby and a variety of measures for infant and child welfare, tuberculosis and the venereal diseases. So strong are the sickness funds that of the three agencies concerned in certain branches of health work, the public authorities, private health agencies and the funds, the last often makes the greatest contribution.

RELATIONSHIP OF THE DOCTOR TO SICKNESS INSURANCE

The relation between sickness funds and doctors has not always been a happy one. There are, no doubt, many causes of friction which might be eliminated by judicious reforms. It would be unfair, however, to make a comparison between existing insurance medical practice and our conception of the ideal. Sir George Newman has said recently that contract practice was the forerunner of the English system of insurance, and when we consider the present insurance scheme we must compare it with the previous contract practice, the evils of which are well known to all of you.[1] In 1930, the British Medical Association went on record as favoring "The inclusion under the National Health Insurance service of the dependents of insured persons, provided that such an extended service include adequate safeguards respecting remuneration and conditions of service." [9] The adoption of this recommendation would bring at least 80 per cent of the total population of Great Britain within the insurance scheme.

While the doctors in some European countries frequently express dissatisfaction with the workings of sickness insurance, the belief is general that the conditions would be worse without it. In England the conditions of medical practice under insurance are determined by negotiation between the ministry of health and the medical profession. In many European countries the strong sickness funds negotiate directly with the doctors, who are in a relatively weaker strategic position. Moreover, this is apt to lead to great diversity of practice. In Germany, for example, doctors may be paid for each visit, they may receive a capitation fee per insured person, these capitation fees may be pooled and each doctor receive so much per visit, payment may be in respect of each case, fixed salaries may be paid or the doctors may be employed on a whole-time basis. In England, the doctor receives a capitation fee per insured person, and any licensed doctor may be inscribed on the panel. In Belgium, doctors may be paid for each consultation, or the insured may go to dispensaries set up by the funds. The dispensary system of treatment is highly developed in Poland, Czechoslovakia and Hungary, where the doctors are paid so much per hour.

The free choice of doctor has been a bone of contention between the doctors and the insurance funds. It is slowly gaining ground, and may be found in England and Switzerland and partially in Belgium, Denmark, Germany and Austria.

In Denmark, the doctors are apparently well satisfied with the insurance scheme. During a recent visit I talked with a number of them and their only complaint was that the less stable classes, who were often treated and left without payment, were not forced to come into the scheme. Danish doctors try to persuade their patients to join an insurance fund, while in the Netherlands many of the funds are organized by the doctors themselves. The medical provisions of the sickness insurance act in France were vigorously combated by the medical profession, with the result that important modifications were introduced. In its present form the law is not opposed by the organized medical profession, although a minority refuses to cooperate.

The limits of time and space do not permit me to discuss in detail the difficulties that have arisen between insurance funds and doctors, nor can I deal with the evils alleged to arise from the practice of sickness insurance. The whole subject has been discussed impartially and wisely by Sir Arthur Newsholme in his recent book "Medicine and the State." Those who wish for accurate information as well as shrewd analysis and con-

8. Report of the European Conference of Rural Hygiene, Health Organization, League of Nations, vol. 1, 1931, p. 21.

9. Newsholme, Arthur: Medicine and the State, Baltimore, Williams & Wilkins Company, 1932, p. 132.

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structive suggestion in regard to the practice of medicine, public health administration and sickness insurance will do well to consult this book as well as the three volumes of studies of European countries, which preceded it.[10] For complete information on sickness insurance I refer you to the publications of the International Labor Office, in which all the facts are recorded. But I cannot leave the subject without calling attention to certain medical advantages of sickness insurance not previously mentioned. It has mobilized large sums for the payment of medical fees from classes of the population not otherwise able to pay; it has limited its payments for medical treatment to qualified practitioners, thus discouraging quackery. It has stabilized the income of physicians. In times of depression it has provided fees for doctors which otherwise they would have been unable to obtain, and the major part of its resources is devoted to payment for medical treatment.

Since it is agreed by most authorities that large groups of the population cannot afford the immediate cost of that complete medical treatment which the advances of medical science have placed at our disposal and that some of its cost must come from the proceeds of taxes, the value of a contributory scheme seems to be beyond question.

No matter what our individual views may be, it cannot be denied that sickness insurance is spreading rapidly. Its development in any given state may be summed up in a few words; growth of friendly societies, legislative recognition of their value and importance, attainment of full-fledged voluntary insurance with government encouragement and supervision, realization that those who need it most do not join the sickness clubs and the adoption of the principle of compulsion. In view of the fact that doctors often favor sickness insurance but object to medical benefit, it may be of interest to note that in the Irish Free State the highly developed system of public medical assistance provides home and institutional treatment for almost half the population in some districts. It is, in the main, a dispensary system supported by public funds, and medical treatment of the insured does not come within the scope of the insurance scheme in Ireland.[11]

THE MATERNITY SERVICE

Another indication of the fact that European governments consider medical treatment of fundamental importance in public health promotion is the large public provision they have made for maternity. The general practice is the provision of midwife service and, if necessary, of the services of a doctor for all pregnancies. I do not mean to imply that all such service is free. As a rule, payment is exacted from those able to pay. But the governments provide for the appointment of a sufficient number of salaried and official midwives to insure that their services may be everywhere available. Institutional treatment for maternity, much of it at the public expense, is becoming a common practice.

The virtual monopoly of normal obstetrics in Europe by the midwife is striking. In Great Britain over 60 per cent of births are attended by midwives. The proportion is about the same in the Netherlands, which has a well organized midwife service. Candidates for the service are carefully selected and trained; the government pays for their education and maintains them during their training; it also restricts their number.[12]

In Denmark,[12] district midwives are appointed, and the government requires their services to be everywhere available. They attend nearly all normal deliveries even in the upper classes. In Sweden [12] there are apparently more midwives than doctors; half of them are salaried officials, and they attend a large majority of all births. The system is about the same in Norway, where in 1927 midwives attended more than 90 per cent of the total of more than 50,000 births. The puerperal death rates in the Scandinavian counties and Holland are remarkably low, not usually exceeding 3 deaths from all causes per thousand live births. As a rule, midwives are not permitted to use forceps. Moreover, a doctor is almost always at their call. In Norway, the midwife works under the district medical officer. In Prussia, nearly 90 per cent of births are attended by midwives.

The practice of medicine in Europe must be profoundly affected by the presence of such large numbers of well trained midwives, by their appointment as salaried officials and by the custom of calling midwives for nearly all confinements. The result is that the ordinary practice of medicine does not include normal obstetrics. The low rates of puerperal mortality in countries with a well organized system of midwives does not necessarily reflect any discredit on the doctor as an obstetrician. My view is that it demonstrates the value of making available skilled obstetric service throughout the country and to all classes without regard to their financial resources. Sir Arthur Newsholme's views are summed up in the following statement:

"There is exceptional safety in childbirth the care of which is undertaken by trained midwives, who have skilled medical help available when complications render this necessary." He also stated: "Thus the international practice in virtue of which midwives care for the vast majority of normal confinements in Europe is associated with an exceptionally favorable maternal experience." [13]

THE NOTIFICATION OF TUBERCULOSIS

Two important public health problems of great interest to the medical practitioner are tuberculosis and the venereal diseases. The practicing physician is usually concerned with the campaign against tuberculosis in two of its aspects: the notification of the disease and its treatment by the public authorities. It is notifiable in Great Britain, where specialists, often whole time, are employed by the local authorities as tuberculosis officers. In France its notification is facultative; the Academy of Medicine favors obligatory notification, but the ranks of the medical profession resist. This is bound up in France with professional secrecy or the "medical secret," which the profession considers should bind its members. The doctors even object in principle on this ground to the certification of causes of death, and in consequence vital statistics in France are incomplete. This difficulty has been gotten over in some French departments by the adoption of the Swiss system, in which certification of the cause of death is absolutely confidential and separate from the certificate attesting to the fact of death. In Switzerland, the doctor is required to notify cases of tuberculosis which are a public danger. There is compulsory notification of tuberculosis in some German states. It is not notifiable in the Netherlands. In Denmark, respiratory tuberculosis is a notifiable disease.

10. Newsholme (footnote 2), based on studies carried out on behalf of the Milbank Memorial Fund.
11. Newsholme (footnote 9, p. 141).
12. Most of these data are taken from Newsholme (footnote 2).
13. Newsholme (footnote 9, pp. 170 and 171).

The notification of disease in the Scandinavian countries is worthy of special attention. There is immediate notification of certain diseases, while weekly or monthly notification of all new cases seen by the doctor is required. No names or addresses are given except for patients with infectious diseases. The doctor receives no payment for these returns; indeed, compensation for notification of disease appears to be restricted to England and one French department.

The system of vital statistics in Scandinavia is altogether admirable. Any one who wishes to study the movement of disease over long periods of time must turn to these countries, where he will find by far the oldest and most complete records. The success of the system is largely due to the loyal and unselfish cooperation of the medical profession.

THE TREATMENT OF TUBERCULOSIS

Antituberculosis dispensaries are multiplying rapidly in European countries. Some figures for 1928 will give an idea of their number.[14] In that year there were 655 in England and Wales, 202 in Poland, 242 in Italy, 2,089 (1926) in Germany, 640 in France and 70 in Austria. As a rule, no treatment is given by these dispensaries, which are intended mainly for diagnostic and preventive social work. In Belgium, where the dispensaries are in the hands of a private health agency, treatment is given, but there has been no friction with the doctors. In Italy there is compulsory sickness insurance against tuberculosis. All those who are insured against invalidity and old age must join, and the scheme also includes the family of the insured. In Hungary and Poland persons with tuberculosis are treated at sickness insurance dispensaries and university clinics. In the cities of Europe, antituberculosis dispensaries are in charge of specialists, and this is true also in rural districts to an increasing extent.

The first establishment of such dispensaries was opposed by the medical profession in many countries, and this was true also of the gradual displacement in their management of general practitioners by specialists. This opposition has died down, and private practitioners now utilize such dispensaries to an increasing extent. Such is the case in France, where the present dispensary system of dealing with tuberculosis was originated by Calmette at Lille in 1905. The development and extension of the system aroused much controversy, the medical syndicates desiring to have the dispensaries controlled by local general practitioners, who would take turns in attending them. This position was untenable, and specialists now direct the dispensaries.

At this point I must refer to the decision of an international conference on rural hygiene which met last year at Geneva. There were official delegations, most of them including doctors, from twenty-three European states. The conference adopted the following resolution, which had been prepared by a committee consisting of three representatives of medical associations from France, Germany and Spain and six other members.

> The rural population and rural doctors should be in a position to utilize the services of centers of diagnosis and if necessary of specialized treatment (for tuberculosis and venereal diseases); such centers should be suitably equipped and provided with a qualified staff.
>
> These services should maintain liaison with the patient's physician, who should be informed of the results of the examinations, or, if necessary, kept in touch with the treatment and its results.

This resolution may be regarded as the official doctrine in Europe.

I wish to make one further comment in closing the section on tuberculosis. When, under the sickness insurance system, the doctor is paid a capitation fee per insured member he loses nothing when he refers his tuberculous patients to the dispensary, hospital or sanatorium.

THE VENEREAL DISEASES

The notification of venereal diseases is not general in Europe, but it is a fairly common practice to require the doctor to notify patients who discontinue treatment before its completion. Sweden, Hungary and Norway, where notification is compulsory, are exceptions. On the other hand, free treatment of venereal diseases is fairly common and is rapidly gaining ground. Denmark is the classic example, for here it began in 1790 and has continued and extended ever since. Every one in Denmark, regardless of class or resources, has the right to free treatment. Such treatment is part of the official duty of salaried district medical officers, of whom there are 70. There is, however, still some treatment of patients by private practitioners. Sweden has followed the example of Denmark. There are polyclinics with specialists attached in all towns with populations in excess of 20,000. In the rural districts treatment is given by the district medical officers. In both Denmark and Sweden the right to free treatment is accompanied by the obligation to pursue treatment, and penalties for discontinuing treatment are enforced. The compulsory notification is followed up by attempts to locate the source of the disease. These were successful in 60 per cent of a large series of cases. Private practitioners do not object to the polyclinics, as the publicity attached to them is said to stimulate a large amount of remunerative private practice. The prevention of venereal diseases in Belgium is based largely on the cooperation of the medical profession, 27 per cent of whom are entitled to receive supplies of arsenicals without cost. Doctors who treat such patients gratuitously are expected to report them and to accept possible supervision by a government medical inspector. Private exceeds public treatment of patients with venereal diseases, and no friction has been created. There has been no general adoption of gratuitous treatment by the German states, as 80 per cent of the cases come under the insurance scheme. The multiplication of centers for treatment in Berlin aroused the opposition of the medical profession.

Newsholme stated that the medical profession in England "has cordially accepted the principle of the gratuitous treatment, at clinics supported from public funds, of all applicants who have a venereal disease."[15]

In Italy the law requires the chief town of each province and all towns over 30,000 to be provided with antivenereal dispensaries. Hospitals are required to treat patients with the disease in the infectious stage, and the state pays the cost of such treatment.

In France the state has provided large sums for antivenereal work, and dispensaries have been established all over the country. There is much free treatment, but patients able to pay are expected to do so. Private practitioners may treat such patients at the public expense under regulation.

This brief summary shows that the public authorities in Europe are rapidly becoming convinced of their responsibility to insure effective treatment for persons

14. These data are taken from the International Health Year Book, Health Organization, League of Nations, 1928.

15. Newsholme (footnote 2, p. 214).

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with venereal diseases. Such treatment is regarded as the best means of prevention, and free treatment, as a means to this end, is rapidly becoming more common.

INFANT WELFARE WORK

Maternal and infant welfare dispensaries or consultations are found in most European countries. They are organized by the public authorities, sickness insurance funds and private health agencies. The following figures give some idea of their numbers.[14] In 1928, there were 4,050 in France, 2,769 in England and Wales, 450 in Belgium, 446 in Germany, 218 in Poland, 177 in Hungary and 110 in the Netherlands. In cities these consultations are usually in charge of specialists, but in rural districts the majority are under the direction of private practitioners. As a rule, no treatment is given, patients being referred to their family doctors, so there has been little friction with the medical profession. There is one notable exception to the rule that no treatment is given by such centers: in France and a number of other countries B C G is administered.

The centers I have been discussing are really well-baby centers. It is unlikely that much of this work would find its way into the hands of general practitioners in any case. It is physiologic rather than pathologic and preventive rather than curative. The same holds true of the treatment of defects found as a result of school medical inspection, which is the concern of specialists rather than of general practitioners.

MEDICAL INSPECTION OF SCHOOL CHILDREN

Medical inspection in the schools is fairly well established in the larger European cities, but is much less developed in the rural districts. In England and certain parts of Germany it is highly developed. As a rule, the inspections are carried out by private practitioners who are paid for part-time work. There is a tendency in some countries to replace the part-time practitioner with the official whole-time school medical inspector. This has led to some friction with the medical profession, notably in Belgium and Germany. The educational authorities in England provide treatment for which a small charge is made, but on the continent the children requiring treatment are referred to private doctors, hospital dispensaries or insurance fund polyclinics. It may be of interest to point out here that in three Swiss cantons sickness insurance for primary school children is compulsory. There is limited free choice of physician, and the children go to the doctor's office or are visited in their homes. Disputes over the scale of fees have occurred between the doctors and the funds, but this is now adjusted. A similar law is proposed in Yugoslavia. The combination of such a scheme with an efficient system of school medical inspection would go far to solve the problem of school hygiene. There is one exception to the statement that in Europe no treatment is given by school medical inspection systems; school dental clinics are common and do much work, but have aroused little opposition.

IS THE DOCTOR EQUAL TO THE TASK ENTRUSTED TO HIM BY SOCIETY?

It has been shown that a heavy responsibility is placed on the doctor by the public authorities in the majority of European countries. The work of the doctor is the key to the success or failure of sickness insurance funds, which he can seriously damage by overcertification of illness and perfunctory treatment or foster by a steady adherence to his difficult duty. His is not the only responsibility; it is shared by the insured, who must understand the aim of group insurance if it is to be successful. I believe that a large majority of the medical profession fully lives up to all that is expected of it within the limits of its own possibilities. It is only a small minority which is responsible for abuses.

Does the doctor in his daily practice apply the most modern principles of treatment and prevention? This, of course, is a counsel of perfection; nothing so ideal can be expected of human beings. It is said that the preventive results of sickness insurance which were confidently expected in England and other countries have not been fully realized. If this be true it is not altogether the fault of the doctor, to whom society owes certain facilities for medical practice, suitable material conditions, proper equipment and adequate public provision for relief and institutional care. Moreover, the doctor's training may not fit him for the important part he is to play in the complicated organization of modern society.

As a result of a number of requests, the League's Health Organization has set up a committee on medical education, and as a first step has obtained from a few medical leaders in Europe reports on the training of doctors in the several countries. Dr. G. Roussy, dean of the Faculty of Medicine in Paris, wrote:[16] "Nothing, in practice, is done to prepare the doctor for his social duties. The reform of medical education is the order of the day in all countries. It is imperative for the following reasons:

"(1) The evolution and constant progress of medical science;

"(2) The new trend of modern medicine which has hitherto been essentially curative, but which is becoming to an ever increasing extent, preventive and social."

According to Prof. J. Tandler of Vienna,[17] "Complaints regarding the inadequacy of medical training and the consequent proposals for reform in this field were already heard before the war and have since become clamant." After discussing these proposals, he said: "All the reforms suggested up to the present will, however, prove inadequate, unless the need is realized of familiarizing a doctor with the social structure of the society in which he lives." Dr. Carl Prausnitz,[18] director of the Social Hygiene Academy at Breslau, noted that "a revision, and extension of (medical) training is long overdue." Sir George Newman,[2] chief medical officer of the ministry of health and board of education in England, pointed out that in medical education, "The preventive aspects of medicine are sometimes neglected. It is assumed that prevention and prophylaxis is the function of the public medical officer and is necessary only for a diploma in the public health field. There never was a greater misapprehension."

These quotations give a partial answer to my question; there is evidently a somewhat general feeling that the present methods of medical education do not adequately prepare the doctor for his heavy social responsibilities.

The League's Health Organization has also convened conferences of directors of schools of hygiene from time to time. These, while concerned primarily with the training of medical officers of health, have adopted recommendations on the public health instruction of

16. General Conclusions on Medical Education in France, Quart. Bull. Health Organization, League of Nations, to be published.
17. Tandler, J.: Reform of Medical Training in Austria, report submitted to the Health Organization, League of Nations.
18. Prausnitz, Carl: Medical Education in Germany, report submitted to the Health Organization, League of Nations.

medical students, for, in the words of the directors:[19] "It is to the main body of general practitioners that the public must look for personal guidance in the prevention and detection of disease." The recommendations, too detailed to reproduce here, insist that every professor in medical schools should "constantly emphasize the preventive aspects of his particular subject; this aspect should, in fact, pervade the entire medical training." Practical experience for the student in the various branches of dispensary and social work is also recommended. Refresher courses in preventive medicine are advised for the general practitioner as well as for the part-time medical officer of health.

I have made no reference to conditions in Soviet Russia, because I have never visited that country. I am told that it is the intention of the government to wipe out private medical practice and to replace it by salaried state doctors. Even now private practice has almost completely disappeared. The complete reform of medical education is of some interest. The old type of medical school no longer exists. It has been replaced by the following three faculties:

1. Therapeutics and prevention.
2. Hygiene and sanitary technic.[19]
3. Maternal and infant welfare.[20]

It is the hope of the Soviet government that these new faculties will turn out doctors suited to the work they will be required to do. I offer this information without comment.

In presenting these facts about the doctor and his relation to the public in Europe today, I have tried to be as objective as possible. I have omitted many facts and may have overemphasized certain others; I do not claim to have given a complete picture. It would be dangerous to attempt to draw any general conclusions, and I propose to restrict my concluding comments to a few brief statements.

In the principal European countries today, society is recognizing to an ever increasing degree its public responsibility for the health of all classes.

The public authorities are laying increasing emphasis on the adequate provision of medical treatment as the basis of the public health.

The private practitioner is being drawn yearly into a closer relation with the government and its public representative authorities.

No difference of opinion can be held as to these facts.

This change in the relationship between society and the doctor has from time to time created friction and dissatisfaction, usually most intense at the beginning of any social or medical reform. This dissatisfaction has died down, as a general rule, with the passage of time and the introduction of modifications suggested by practical experience.

The least dissatisfaction is found where the medical profession is conversant with public social and medical problems and is united into strong but not narrow professional groups, and where the public authorities keep the doctors in touch with the purposes of their proposals.

In the countries where society has made the greatest demands on the doctor, where the old forms of private practice have most diminished and, if you will, where the socialization of medicine has made the greatest progress, the moral and material position of the doctor has not visibly suffered. On the contrary, he is often more highly regarded and his reward is relatively greater in proportion to the heavier but more honorable social responsibilities which he has been called on to assume. "For it is true today as it has never been true before that one can serve himself only by serving the community. The social outlook and socialized behavior are demanded of contemporary man not merely, nor even primarily, on grounds of justice and mercy, but of the most self-centered and materialistic wisdom."[21]

19. Report on the Conferences of Directors of Schools of Hygiene, held in Paris and Dresden during 1930, Health Organization, League of Nations.

20. Rev. d'hyg. et de méd. sociales, Dr. A. Rouhakine, March and April, 1931.

21. Fairchild, Henry Pratt: Harper's Monthly Magazine, May, 1932, p. 641, no. 984.

EFFECT OF KNEE-CHEST POSITION AND POSTURAL EXERCISES ON POSTPARTUM RETROVERSION

GOODRICH C. SCHAUFFLER, M.D.
PORTLAND, ORE.

Clinical observation of the results of measures empirically prescribed to curb postpartum retroversion suggested that this empiricism might be without basis in fact. Therefore controlled observations were started.

Certain factors appear to favor the production of postpartum retroversion. The tendency toward descensus inherent in the mechanism of labor weakens the supports of the uterus and draws it down, swinging the corpus into a type of retroversion that is identical with early prolapse.

Following delivery, the uterus is normally in a position approximating first degree retroversion. Theoretically, this tendency is increased through the dorsal posture of the patient in bed, which is more or less routine. The natural tendency of the heavy corpus to drop back against the sacral promontory is thus accentuated.

Subinvolution increases this tendency. The size and weight of the congested uterus (with the patient on her back) work against the normal tendency toward anteversion exerted by shortening of the anterior uterine wall and contraction of the round ligaments. These two factors are a part of normal involution. The persistence of subthreshold infection, injury to the cervix, and retained secundines, with their resultant congestion, are factors that oppose these normal restorative mechanisms.

One would naturally suppose that a ventral posture, favoring a dropping forward of the heavy corpus, would aid the natural forces. The knee-chest position, especially, should exert an anterior tendency and also help to correct descensus. Theoretically it should not only assist the natural forces but also improve drainage and aid in eliminating congestion as well. Unfortunately, the observations in this study constitute a definite and surprising contradiction to this belief, which has been held as therapeutic dogma.

EXAMINATIONS

The examinations on which these observations are based were made according to our regimen, at approximately six weeks after delivery, by myself with the assistance of Dr. Martin S. Sichel under the Department of Gynecology of the University of Oregon Medical School. A criticism of our conclusions may be

From the Department of Gynecology, University of Oregon Medical School.

Read before the Portland, Oregon, Society of Obstetricians and Gynecologists, Jan. 27, 1932.

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suggested on the ground that the reported observations are the result of a single examination. However, it was found inadvisable to use statistics from subsequent examinations for purposes of this study, since more effective measures were immediately instituted to control retroversion. I refer to replacement, the use of pessaries and decongestive measures, all tending to obscure later observations. Doubtless, in some instances, spontaneous corrections would have been noted later. It is generally conceded that, barring abnormal factors, involution and return to the normal anterior position should have occurred by the sixth week. Therefore, our report is based on examinations made at this time.

NUMBER OF CASES

I wish to emphasize, first, that 169 cases comprise a small group on which to base conclusions. It is, however, a sufficient number to warrant comment and should successfully upset dogmatic teaching based apparently on speculation and argument from analogy. Certainly there is little in the nature of controlled experiment to support current teachings.

TYPE OF CASE

The cases that constitute the basis of this study were taken from consecutive deliveries at the Salvation Army White Shield Home. The patients were nearly all vigorous young women (about 90 per cent primiparous) and presented a group practically free from complicating factors such as retroversion from previous pregnancy, prolapse, and the like. The only considerable complicating factor consists in possible congenital or traumatic retroversion. The incidence of such conditions should be equal in our test and control groups and therefore is negligible in this study.

SELECTION OF CASES AND TYPE OF EXERCISES

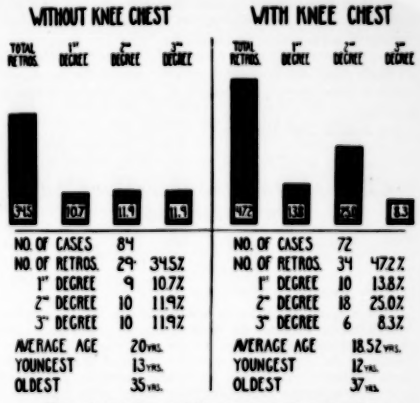
Patients were numbered in the order of their delivery. Alternate patients (odd numbers) were put on a special regimen consisting of the ventral posture in bed, and the knee-chest position beginning on the eighth day post partum and increasing to twenty minutes twice a day. On the eighteenth day they were started on the camel walk, and instructed to rest as nearly as possible entirely on the abdomen while in the prone position. Conservative abdominal exercises in the upright posture were also prescribed. As far as possible, these procedures were supervised. Naturally, some patients were less faithful than others, but on the whole it would be difficult to obtain a better regulated and supervised group.

The even number patients were given no exercises whatever, and no instructions in regard to prone posture, and were directed not to undertake any such measures on their own initiative.

EFFECT OF KNEE-CHEST POSITION

The accompanying chart shows that the incidence of retroversion following the use of the knee-chest position has been 47.2 per cent as opposed to 34.5 per cent in the cases in which the knee-chest position was not used. There is room for a certain variation due to chance in as small a group of cases as this. However, there can be no question that the value of such exercises as described has been in the past vastly overestimated. Perhaps it is unfair to conclude from this series that the use of the knee-chest position actually increases the incidence of postpartum retroversion. On the other hand, the confidence that has always been placed in it as a therapeutic measure is no longer justified. It seems fair to conclude also that, since in this type of case postural exercises should be the most effective mechanically, owing to the heaviness and size of the corpus, the use of the knee-chest position in other types of retroversion would be even more futile.

If one chooses to put implicit confidence in these figures, then one must search for factors in the use of such exercises that might actually retard involution and favor retroversion. It is conceivable that the trauma due to early movement and disturbance of the pelvic structures with possible retardation of circulatory rehabilitation might act in such a way. It is quite possible that the natural forces of reconstruction may work better with the uterus in the vertical position, splinted by the sacral promontory, than under circumstances in which it is frequently teetered forward into an anterior position (perhaps unphysiologic at this time). As an analogy may be cited the potential harm in too early attempts to obtain complete flexion in an



Effect of knee-chest position on postpartum retroversion.

injured joint. These are merely speculations, but they may have some bearing on our rather surprising results.

We feel added confidence in the result of these studies from the fact that check figures during the eighteen months taken for the experiment showed a constantly higher number of retroversions following the use of the knee-chest position. This should eliminate the possibility of a temporary variation due to chance.

The percentages that I have mentioned have been for the entire group of retroversions. It is of interest to note that the majority of retroversions have been second and third degree. This definitely establishes the fact that our observations are not influenced by a large group of borderline cases. If a large majority of these cases had been first degree retroversions there would be considerably more doubt as to the significance of our results. It will be noted in the chart that there is an incidence of 25 per cent of second degree retroversions following the use of the knee-chest position as opposed to 11.9 per cent in cases in which the knee-chest position has not been used. This discrepancy is even more marked than that in the total group. Since the second degree retroversion may be considered the average or the mean of the entire group, these comparative per-

centages lend some strength to the hypothesis that there may be factors in the use of the knee-chest position actually antagonistic to normal involution and anteversion.

The percentage of retroversion in this entire group, including tests and controls, is in general accord with other figures for similar groups. I have not, however, found any other critical studies covering this particular field and therefore think these observations worthy of note. Further study in the same field is indicated.

SUMMARY AND CONCLUSIONS

1. Alternate patients (odd numbers) in a group of 169 deliveries were put on knee-chest position and postural exercises, whereas alternate patients (even numbers) were not given such measures.

2. Examination after six weeks revealed a substantially higher incidence of postpartum retroversions in the group subjected to the so-called corrective measures.

3. It is fair at least to conclude that the use of such exercises does not justify the confidence which has formerly been placed in them.

4. It seems wise even to seek for factors in the use of such exercises that may actually retard the tendency toward involution and return to the normal anterior position.

802 Medical Arts Building.

Clinical Notes, Suggestions and New Instruments

CIRRHOSIS OF THE LIVER CAUSED BY CARBON TETRACHLORIDE

WINFIELD L. BUTSCH, M.D., NEW HAVEN, CONN.

Carbon tetrachloride has a widespread use with apparently little attention accorded to its danger as a toxic agent. Out of this neglect has appeared a case of cirrhosis of the liver similar to the experimental cirrhosis produced in dogs by the same substance. Although there are numerous records of acute yellow atrophy caused by carbon tetrachloride, no instance of liver cirrhosis has been reported in the literature.

The poison was assimilated by the patient through inhalation while at work. Lamson[1] has produced a similar effect by immersing dogs in a concentrated vapor of carbon tetrachloride repeatedly over a period of one month. Autopsy of the animals showed the liver lesion to be one of healing central necrosis with stellate areas of collapsed framework about the hepatic veins. The adjacent liver cells in a wide band contained fat droplets.

Bollman and Mann[2] in their work on experimentally produced lesions of the liver demonstrated that, with repeated sublethal doses of carbon tetrachloride, increasing injury to the livers of dogs resulted in the production of most of the symptoms characteristic of portal cirrhosis. Gastro-intestinal upsets, diarrhea and intestinal hemorrhages were the first symptoms observed. The excretory function of the injured livers was marked by a definite retention of dye.

REPORT OF CASE

An American laborer, aged 54, entered the hospital with complaints of a large abdomen, morning nausea and weakness. Six months previously he had been transferred to a position requiring the cleaning of old telephones with a solution containing 60 per cent carbon tetrachloride and 40 per cent gasoline. This was done in a poorly ventilated room, where the fumes arising from the cleaning solution were unmistakable. He found himself frequently giddy with an aching head toward the close of the day, and often nauseated when he returned home for the evening meal. After he had been at this work for two months, a period of intractable diarrhea which lasted three weeks occurred and his abdomen began to increase in size. Five weeks before admission he developed morning nausea and weakness, accompanied by loss of sexual libido. A dry irritative cough appeared with small amounts of stringy, whitish sputum. All the other men engaged at this work developed symptoms of nausea, dizziness and lack of appetite, and asked to be transferred from time to time. The patient remained on duty.

The patient was large, well developed and well nourished. His complexion was pale. He did not show prostration. The positive observations were limited to the abdomen, which was enlarged and globular with dilated veins coursing over its upper half. Shifting dulness was noted in the flanks, accompanied by a fluid wave. The liver and spleen were not palpable at the time.

The positive laboratory observations of especial reference to this case were as follows:

Van den Bergh test: direct, negative; indirect, 1.1 mg. per hundred cubic centimeters.

Bromsulphalein function test: 50 per cent retention at end of five minutes; no retention at end of thirty minutes.

Blood fat: admission, 1,245 mg. per hundred cubic centimeters estimated as tripalmitin; three weeks later, 765 mg.

Serum cholesterol: admission, 856 mg. per hundred cubic centimeters; three weeks later, 563 mg.

Again the work of Mann on dogs proved to be of great value in suggesting the treatment of the case. In dogs in which ascites developed after experimentally produced cirrhosis, Mann was able to induce the absorption of the ascites with restriction of meat and the feeding of large amounts of carbohydrates. He then could almost at will cause alternately the formation and removal of ascitic fluid by alternating these two foods in the diet.

Accordingly, the patient was placed on a high carbohydrate diet with restriction of all meats. Urea produced a moderate diuresis. At the time of discharge, one month later, he had regained his libido and felt stronger. His abdomen had decreased in girth from 42 to 40 inches. At no time did the patient have a febrile temperature or evidences of clinical jaundice.

He returned for observation at monthly intervals.

One month later he was back at work with his strength returning very slowly. No shifting dulness was noted. The liver and spleen were not palpable. His appetite was poor. Dilated veins were still prominent.

Two months later he felt somewhat stronger though the cough persisted. The liver was palpable 4 cm. below the costal margin in the midclavicular line. He was allowed meat twice a week. The blood fat was 702 mg. per hundred cubic centimeters.

Three months later he felt much stronger and his appetite had improved. The abdominal veins were much less prominent. The liver was palpable 2 cm. below the costal margin. The spleen was not palpable. The abdominal girth was 39 inches. He was allowed meat every other day.

Four months later he was feeling strong enough to work in the garden in his spare time. His appetite was good. The liver was palpable at the costal margin. His abdominal girth was 38½ inches. Since discharge, his weight had remained stationary at 180 pounds (81.6 Kg.). The blood fat was 497 mg. per hundred cubic centimeters.

COMMENT

Although there was no conclusive evidence in this case of a cirrhotic liver, it seems reasonable to presume the diagnosis to be correct in view of the characteristic symptoms and the signs of portal obstruction following close on the exposure to carbon tetrachloride.

In connection with the lipemia, it is interesting to note the observations in a case reported by MacMahon and Weiss,[3] in which an autopsy was performed in a case of acute yellow atrophy in which the patient died five days after the accidental

From the Medical Service of the New Haven Hospital.

1. Lamson, P. D., and others: Bull. Johns Hopkins Hosp. **36**: 107 (Feb.) 1923.

2. Bollman, J. L., and Mann, F. C.: Ann. Int. Med. **5**: 699 (Dec.) 1931.

3. MacMahon, H. E., and Weiss, Soma: Am. J. Path. **5**: 623 (Nov.) 1929.

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ingestion of carbona. It was found that 64 per cent of the blood in the pulmonary artery and 25 per cent of the blood in the inferior vena cava was fat. Rosenthal and Lillie [4] noted that out of seven dogs given carbon tetrachloride orally one developed a spontaneous lipemia (estimated by the appearance of the blood only).

In view of the frequent use of carbon tetrachloride as a solvent in the dry cleaning and rubber industries and as a general cleaning solution, it is noteworthy that chronic liver injury may occur under conditions in which large amounts are inhaled.

METHOD FOR DIAGNOSIS OF AMEBIASIS

ALFRED C. REED, M.D., AND HERBERT G. JOHNSTONE, A.B., M.S.
SAN FRANCISCO

The diagnosis of amebiasis rests solely on the microscopic identification of the pathogenic ameba Endamoeba histolytica. This identification requires special technical skill and experience. An unqualifield technician is entirely unreliable and may be dangerous. Few laboratories and fewer physicians have available a properly qualified and reliable technician. Unless diagnosis can be made properly it is much safer not to attempt it at all.

Furthermore, ordinary stool specimens must be examined for amebic cysts within forty-eight hours as the chromatoidal bodies disappear and the cysts break up, so that positive observations become less as time progresses. A large percentage of patients with amebiasis, even in the absence of diarrhea, show motile amebas, together with cysts or alone. Motile amebas die quickly and only immediate examination of the fresh stool specimen will demonstrate them. It is always desirable to examine a series of specimens, at least covering six consecutive days. If the first tests are negative, the patient should receive epsom salt in small amount with examination of the fresh soft stools. When amebiasis is suspected, sigmoidoscopic examination should be made and swabs taken from ulcers. If no ulcers are seen, mucus or fecal material from the sigmoid wall should be examined directly for amebiasis.

Finally, certain identification of the ameba is best done with the use of the iron hematoxylin stain, which should be a routine procedure in stool examinatjon for protozoa. This staining method is long and complicated and requires special technical skill.

We have found in practice that it is possible to follow a routine method for diagnosis of amebiasis which will obviate all the difficulties enumerated and meet all the requirements for accurate diagnosis. This method depends on the preparation of smears by the attending physician directly from the patient, in such form that motile amebas are preserved as well as cysts, and swab specimens from the sigmoid can be utilized as well as ordinary fecal specimens. These wet smears are sent to a central reliable laboratory for staining and study.

This method has been described by William M. James [1] and was developed on the basis of previous reports and recommendations of Dr. C. A. Kofoid. It is easy for the physician to prepare and keep on hand the few solutions necessary and a supply of proper containers. The method can be summarized as follows:

A small amount of the fresh stool specimen is spread on a clean flamed slide with a paste brush. The strokes should be made parallel to the longer edges of the slide to facilitate microscopic examination. The pressure should be so regulated that the material shall be spread thinly, eliminating all lumpy particles. Approximately 1½ inches of the surface length of the slide should be covered. Before the slide is allowed to dry, it is immersed immediately in Schaudinn's fixing fluid.[2] The slide can either remain for ten minutes in the fixing fluid heated to 60 C. or be kept over night in the fluid without heating. The slide is then placed for ten minutes in 70 per cent alcohol tinged to a wine color with compound solution of iodine. Following this, the slides are placed in 70 per cent alcohol for five minutes and then put in bottles containing 70 per cent alcohol, for mailing. A rubber band should be placed round each end of the slide to prevent breakage. In addition, a piece of absorbent cotton should be packed on the top of the slides to eliminate as much movement as possible. Each slide should be properly marked with a diamond pencil. Pure ethyl alcohol must be used, and at no time should the smears be allowed to dry. The bottle containing the slides is put in a screw top cardboard mailing container and sent to the laboratory to be stained (iron-hematoxylin) and examined.

350 Post Street.

4. Rosenthal, S. M., and Lillie, R. D.: Am. J. Physiol. 97: 131 (April) 1931.
From the Pacific Institute of Tropical Medicine within the Hooper Foundation of the University of California Medical School.

1. James, W. M.: Remarks on the Diagnosis of Intestinal Amebiasis, Fifteenth Annual Report of Medical Dept. of United Fruit Company, 1926, p. 82.

2. Schaudinn's fluid: Two parts of saturated aqueous mercuric chloride in physiologic solution of sodium chloride, one part 95 per cent alcohol. This is the stock solution and will keep indefinitely. Four cc. of glacial acetic acid is added to 96 cc. of the stock solution on using. Fresh solution should be made up at frequent intervals.

Committee on Foods

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED BY THE COMMITTEE ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION FOLLOWING ANY NECESSARY CORRECTIONS OF THE LABELS AND ADVERTISING TO CONFORM TO THE RULES AND REGULATIONS. THESE PRODUCTS ARE APPROVED FOR ADVERTISING IN THE PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION, AND FOR GENERAL PROMULGATION TO THE PUBLIC. THEY WILL BE INCLUDED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION.

RAYMOND HERTWIG, Secretary.

SQUIBB DEXTRO-VITAVOSE
(Dextrose and Malted Wheat Germ Extract)

Manufacturer.—E. R. Squibb and Sons, New Brunswick, N. J.

Description.—A powdered mixture of dextrose and extract of malted wheat germ and U. S. P. malt; essentially dextrose, maltose, dextrins and "starch intermediate products"; contains vitamins B and G in substantial quantities; packed in tins.

Manufacture.—A mixture of dextrose (65 per cent) and Vitavose (35 per cent). See this section for Vitavose (THE JOURNAL, Aug. 6, 1932, p. 477).

Analysis (submitted by manufacturer).—

	per cent
Moisture	1.5
Ash	1.5
Fat	0.0
Soluble protein (albuminoid N × 6.25)	2.7
Soluble amino and other nitrogenous compounds (amino N × 6.25)	2.3
Dextrose *	65.
Reducing sugars as maltose *	15.
Dextrins *	12.
Crude fiber	0.0
Total carbohydrates (by difference)	87.
Iron (Fe)	0.004

* Estimated from analysis of Vitavose and from factory formula.

Calories.—3.9 per gram; 111 per ounce.

Vitamins.—Vitamin assay shows a content of vitamins B and G at least equal to 30 times and 10 times, respectively, of that of equal weights of fresh raw whole milk.

Claims of Manufacturer.—Intended particularly for the carbohydrate, and vitamins B and G supplement of milk for infants. May be used as a similar diet supplement for children and adults.

HECHT'S KEW BEE BREAD
HECHT'S SLICED BREAD

Manufacturer.—Hecht's Bakery, Bristol, Tenn.

Description.—A white bread made by the sponge dough method (method described in THE JOURNAL, March 5, 1932, p. 817); prepared from a mixture of patent flours, water, shortening, yeast, salt, dextrose, shortening, evaporated milk and a yeast food containing calcium sulphate, ammonium chloride, sodium chloride and potassium bromate.

Analysis (submitted by manufacturer).—

	per cent
Moisture (entire loaf)	36.8
Ash	1.7
Fat	3.0
Protein (N × 6.25)	9.5
Crude fiber	0.3
Carbohydrates other than crude fiber (by difference)	48.7

Calories.—2.6 per gram; 74 per ounce.

Claims of Manufacturer.—A bread of good quality.

VI-ZOY

(Essentially Sugars, Cocoa, Soy Bean Flour, Fats, Dry Yeast, Salts, Cod Liver Oil and Cod Liver Oil Concentrate, and Flavoring; Contains Vitamins A, B, D and G)

Manufacturer.—Harshaw Essential Foods, Inc., Cleveland.

Description.—A powdered food for the preparation of a nutritious beverage; contains sucrose, soy bean flour, cocoa, lactose, maltose, dextrose, dried yeast, butter, coconut and cottonseed oils, cod liver oil and cod liver oil concentrate, calcium, iron and magnesium lactate, potassium and sodium chlorides, coumarin, vanillin and other flavoring; contains vitamins A, B, D and G.

Manufacture.—Dried soy beans are freed of foreign materials, washed, treated with dilute acid solution, washed free of acid, steamed, ground, and dispersed in water to a milky fluid. The fats and cod liver oil concentrate are added, and the mixture is homogenized and spray dried in hot air currents (from 85 to 90 C.). The powder is promptly cooled, is mixed with the sugars, cocoa, salts and flavors, is bolted through a sixty mesh screen, and is packed in hermetically sealed cans from which the air is withdrawn under vacuum and replaced by nitrogen gas to prevent the development of rancidity.

Analysis (submitted by manufacturer).—

	per cent
Moisture	2.1
Ash	3.2
Fat (ether extract)	11.6
Protein (noncaffeine and nontheobromine N × 6.25)	13.7
Reducing sugars as dextrose	10.7
Sucrose (copper reduction method)	41.0
Starch (acid hydrolysis method)	2.9
Crude fiber	2.0
Total carbohydrates other than crude fiber (by difference)	67.0
Caffeine	0.04
Theobromine	0.32
Phosphorus (P)	0.31
Calcium (Ca)	0.30
Iron (Fe)	0.02

Calories.—4.3 per gram; 122 per ounce.

Vitamins.—Biologic tests by means of rats give the following vitamin content:

Vitamin A: 280 units per ounce. (One unit is the minimum amount of the substance required daily to give an average gain in weight of 3 Gm. a week for eight weeks after the "depletion" period.)

Vitamin B complex: 28 units per ounce. (One unit of Vitamin B "complex" is the minimum amount of test substance required daily to induce an average gain of 3 Gm. a week for eight weeks after the depletion period.)

Vitamin D: 35 Steenbock units (curative method) per ounce. (One Steenbock unit [curative method] is the total amount of substance required to induce a positive line test in ten days.)

Claims of Manufacturer.—A powdered food for the preparation of a table beverage with milk, for food tablets, etc. Enhances or supplements the vitamins A, B, D and G values, iron and calcium content, and caloric value of milk. Vi-Zoy attractively flavors milk.

EHMANN RIPE OLIVES

(Medium, Large, Extra Large, Mammoth, Giant, Jumbo, Colossal)

Manufacturer.—Ehmann Olive Company, Oroville, Calif.

Description.—California ripe olives of graded sizes in brine.

Manufacture.—The fresh mature fruit is mechanically separated into olives of definite sizes; these are separately placed in processing vats containing a dilute solution of caustic soda (2 per cent) within a few hours after harvesting. The alkaline solution removes natural bitter elements (tannic acid); from four to seven applications of the alkaline solution, depending on the size of the olives, are necessary to penetrate entirely to the olive pit. Usually there is a lapse of from five to seven days between the alkaline treatments. The olives remain in the solution only a few hours each time and are washed three or four times daily with fresh water between the treatments. After the last caustic soda treatment the alkali is washed out with water and the olives are allowed to stand in salt brine. After sufficient salt flavor is acquired, they are given a final sorting and packed in brine (2.5 to 3 per cent) in tins and glass jars. The sealed packages are processed at 116 C. for one hour. The entire preparation and processing are under the supervision of the California State Department of Public Health.

Analysis (submitted by manufacturer).—

The edible portion of ripe olives is 81 per cent of the entire olive.

(edible portion of drained olives; sizes medium, large, extra large)

	per cent
Moisture	73.5
Ash	2.3
Fat	18.6
Protein (N × 6.25)	1.3
Crude fiber	1.8
Carbohydrates other than crude fiber (by difference)	2.5

(edible portion of drained olives; sizes giant, jumbo, colossal)

	per cent
Moisture	82.5
Ash	2.1
Fat	9.1
Protein (N × 6.25)	1.3
Crude fiber	2.6
Carbohydrates other than crude fiber (by difference)	2.4

Calories.—(Small sizes) 1.8 per gram; 51 per ounce.
(Large sizes) 1.0 per gram; 28 per ounce.

Claims of Manufacturer.—Ripe olives of graded sizes for table use.

DAVIDSON'S PRIZE WHEAT BREAD

(75% White Flour, 25% Whole Wheat Flour)

Manufacturer.—Davidson Baking Company, Portland, Ore.

Description.—A white bread made by the sponge dough method (method described in THE JOURNAL, March 5, 1932, p. 817); prepared from patent flour, whole wheat flour, water, sucrose, yeast, salt, shortening, molasses, malt syrup and a yeast food containing calcium sulphate, ammonium chloride, sodium chloride and potassium bromate.

Analysis (submitted by manufacturer).—

	per cent
Moisture (entire loaf)	35.5
Ash	0.9
Fat	1.2
Protein (N × 6.35)	10.0
Crude fiber	0.7
Carbohydrates other than crude fiber (by difference)	51.7

Calories.—2.2 per gram; 62 per ounce.

Claims of Manufacturer.—A bread of good quality.

CROWN CAKE FLOUR (Bleached)

Manufacturer.—Crown Mills, Portland, Ore.

Description.—A soft white wheat short patent flour designed for cake baking.

Manufacture.—Selected soft white wheat is cleaned, washed, tempered, and milled by essentially the same procedures as described in THE JOURNAL, June 18, 1932, page 2210. Chosen flour streams are blended, bleached with 21 Gm. of chlorine for each 196 pounds and 1 part of benzoyl peroxide to 28,000 parts of flour and automatically packed in bags.

Analysis (submitted by manufacturer).—

	per cent
Moisture	13.0
Ash	0.36
Fat (ether extraction method)	1.0
Protein (N × 5.7)	8.7
Crude fiber	0.3
Carbohydrates other than crude fiber (by difference)	76.6

Calories.—3.5 per gram; 99 per ounce.

Claims of Manufacturer.—A soft white wheat short patent flour designed for cake baking.

USEMORE BRAND GOLDEN SYRUP

(85 Per Cent Corn Syrup, 15 Per Cent Refiners' Syrup)

Packer.—D. B. Scully Syrup Company, Chicago.

Distributor.—Service Grocer Company, Detroit.

Description.—A table syrup; a corn syrup flavored with refiners' syrup.

Manufacture, Analysis, Calories, Claims of Manufacturer.—See these sections for Banner Blue Corn Syrup with Cane Flavor (THE JOURNAL, March 5, 1932, p. 817).

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MEDICAL EDUCATION IN THE UNITED STATES AND CANADA

ANNUAL PRESENTATION OF EDUCATIONAL DATA FOR 1931-1932 BY THE COUNCIL ON MEDICAL EDUCATION AND HOSPITALS

PART I. PREMEDICAL EDUCATION

For the convenience of admission officers of medical schools, the Council on Medical Education and Hospitals has, since 1915, published a list of "Approved Colleges of Arts and Sciences and Junior Colleges," which is a consolidation of the approved lists of recognized national and regional standardizing agencies. The same information is also contained in Bulletin 19, together with Supplements 1 and 2, issued by the Office of Education in the United States Department of the Interior.

Prospective medical students do well to secure their premedical training in colleges which are included in the approved list. Otherwise they may find it difficult or impossible to enter the medical school of their choice; for, while there is no inviolable rule excluding candidates from unaccredited colleges, the medical schools, in selecting from a large number of applicants, naturally and properly give the preference to those whose preparation has been received in institutions which are known to conform to accepted standards or exact of students from other institutions, qualitatively and quantitatively, a higher performance. Colleges not named in the accompanying list are urged to apply for approval to one of the organizations appearing in the key to table 1.

Junior Colleges.—Credentials of premedical work taken in junior colleges (indicated in the list by an asterisk) must show the completion of at least sixty semester hours in subjects of college grade, including the required credits in physics, chemistry, biology and English. Students presenting such credentials must have completed fifteen units of accredited high school work before taking college courses.

Normal Schools.—Students presenting credentials from normal schools, which are organized primarily for the training of teachers, may be accepted if such credentials have the certification of the registrar of the state university that the courses completed by the student are the equivalent of the courses accepted from accredited colleges and universities.

TABLE 1.—*Approved Colleges of Arts and Sciences and Junior Colleges*

KEY TO TABLE 1

KEY LETTER	AGENCY
A	Association of American Universities.
C	North Central Association of Colleges and Secondary Schools.
M	Middle States Association of Colleges and Secondary Schools.
N	New England Association of Colleges and Secondary Schools, Member of.
S	Association of Colleges and Secondary Schools of the Southern States.
W	Northwest Association of Secondary and Higher Schools.

(Revised to May 15, 1932)

Name of College and Location	*Authority*
ALABAMA	
Alabama College, Montevallo	S
Alabama Polytechnic Institute, Auburn	S
Birmingham Southern College, Birmingham	A-S
Howard College, Birmingham	A-S
Judson College, Marion	S
Marion Institute,* Marion	S
Spring Hill College, Spring Hill	S
Talladega College, Talladega	S
University of Alabama, University	A-S
Woman's College of Alabama, Montgomery	S
ARIZONA	
Arizona State Teachers College, Flagstaff	C
Arizona State Teachers College, Tempe	C
Phoenix Junior College,* Phoenix	C
University of Arizona, Tucson	A-C
ARKANSAS	
Arkansas Agricultural and Mechanical College,* Jonesboro	C
Arkansas Agricultural and Mechanical College,* Monticello	C
Arkansas Polytechnic Institute,* Russellville	C
Arkansas State Teachers College, Conway	C
Central College,* Conway	C
College of the Ozarks, Clarksville	C
Galloway Woman's College,* Searcy	C
Hendrix College, Conway	A-C
Little Rock Junior College,* Little Rock	C
State Agricultural and Mechanical College,* Magnolia	C
University of Arkansas, Fayetteville	A-C
CALIFORNIA	
California Institute of Technology, Pasadena	A
College of San Rafael, San Rafael	W
College of the Holy Name, Oakland	W
College of the Pacific, Stockton	A
Dominican College, San Rafael	A
Immaculate Heart College, Hollywood	W
Loyola University, Los Angeles	W
Mills College, Mills College (Oakland)	A
Occidental College, Los Angeles	A
Pacific Union College,* Angwin	W
Pomona College, Claremont	A
San Diego State Teachers College, San Diego	W
Stanford University, Stanford University	A
St. Mary's College, St. Mary's College (Oakland)	W
University of California, Berkeley	A
University of Redlands, Redlands	A-W
University of San Francisco, San Francisco	W
University of Santa Clara, Santa Clara	W
University of Southern California, Los Angeles	A
Whittier College, Whittier	A
COLORADO	
Colorado Agricultural College, Fort Collins	C
Colorado College, Colorado Springs	A-C
Colorado School of Mines, Golden	A-C
Colorado State Teachers College, Greeley	C
Colorado Woman's College,* Denver	C
Loretto Heights College, Loretto	C
Regis College,* Denver	C
University of Colorado, Boulder	A-C
University of Denver, University Park (Denver)	A-C
Western State College of Colorado, Gunnison	C
CONNECTICUT	
Albertus Magnus College, New Haven	N
Connecticut Agricultural College, Storrs	N
Connecticut College for Women, New London	A-N
Junior College of Connecticut,* Bridgeport	N
Trinity College, Hartford	A-N
Wesleyan University, Middletown	A-N
Yale University, New Haven	A-N
DELAWARE	
University of Delaware, Newark	A-M
DISTRICT OF COLUMBIA	
American University, Washington	M
Catholic University of America, Washington	A-M
Georgetown University, Washington	A-M
George Washington University, Washington	A-M
Howard University, Washington	M
Trinity College, Washington	A-M
FLORIDA	
Florida State College for Women, Tallahassee	A-S
Rollins College, Winter Park	S
St. Petersburg Junior College,* St. Petersburg	S
University of Florida, Gainesville	A-S

* Junior College.

TABLE 1.—*Approved Colleges of Arts and Sciences and Junior Colleges—Continued*

Name of College and Location	*Authority*
GEORGIA	
Agnes Scott College, Decatur	A-S
Andrew College,* Cuthbert	S
Brenau College, Gainesville	S
Emory University, Atlanta	A-S
Georgia School of Technology, Atlanta	A-S
Georgia State College for Women, Milledgeville	S
Georgia State Teachers College, Athens	S
Georgia State Woman's College, Valdosta	S
Junior College of Augusta,* Augusta	S
Mercer University, Macon	S
Shorter College, Rome	A-S
University of Georgia, Athens	A-S
Wesleyan College, Macon	A-S
HAWAII	
University of Hawaii, Honolulu	A
IDAHO	
College of Idaho, Caldwell	W
Northwest Nazarene College,* Nampa	W
State Normal School, Albion	W
State Normal School, Lewiston	W
Southern Branch, University of Idaho,* Pocatello	W
University of Idaho, Moscow	A-W
ILLINOIS	
Armour Institute of Technology, Chicago	C
Augustana College and Theological Seminary, Rock Island	C
Blackburn College,* Carlinville	C
Bradley Polytechnic Institute, Peoria	A-C
Carthage College, Carthage	A-C
Central Y. M. C. A. College,* Chicago	C
Crane Junior College,* Chicago	C
De Paul University, Chicago	C
Elmhurst College,* Elmhurst	C
Eureka College,* Eureka	A-C
Frances Shimer Junior College,* Mt. Carroll	C
Illinois College, Jacksonville	A-C
Illinois State Normal University (Southern), Carbondale	S
Illinois State Normal University, Normal	S
Illinois State Teachers College (Northern), DeKalb	S
Illinois State Teachers College (Eastern), Charleston	S
Illinois State Teachers College (Western), Macomb	S
Illinois Wesleyan University, Bloomington	A-C
James Milliken University, Decatur	C
Joliet Junior College,* Joliet	C
Knox College, Galesburg	A-C
Lake Forest College, Lake Forest	A-C
La Salle-Peru-Oglesby Junior College,* La Salle	C
Lewis Institute, Chicago	C
Lincoln College,* Lincoln	C
Loyola University, Chicago	C
Lyons Township Junior College,* La Grange	C
MacMurray College for Women (formerly Illinois Woman's College), Jacksonville	A-C
McKendree College, Lebanon	C
Monmouth College, Monmouth	A-C
Monticello Seminary,* Godfrey	C
Morton Junior College,* Cicero	C
North Park College,* Chicago	C
North Central College, Naperville	A-C
Northwestern University, Evanston	A-C
Rockford College, Rockford	A-C
Rosary College, River Forest	A-C
Shurtleff College, Alton	A-C
University of Chicago, Chicago	A-C
University of Illinois, Urbana	A-C
Wheaton College, Wheaton	A-C
INDIANA	
Ball State Teachers College, Muncie	C
Butler University, Indianapolis	C
De Pauw University, Greencastle	A-C
Earlham College, Richmond	A-C
Evansville College, Evansville	C
Franklin College, Franklin	A-C
Hanover College, Hanover	C
Indiana State Teachers College, Terre Haute	C
Indiana University, Bloomington	A-C
Manchester College, North Manchester	C
Purdue University, Lafayette	A-C
Rose Polytechnic Institute, Terre Haute	A-C
St. Joseph's College,* Collegeville	C
St. Mary's College, Notre Dame	C
St. Mary-of-the-Woods College, Saint Mary-of-the-Woods	C
University of Notre Dame, Notre Dame	A-C
Valparaiso University, Valparaiso	C
Wabash College, Crawfordsville	A-C
IOWA	
Clarke College (formerly Mt. St. Joseph College), Dubuque	C
Coe College, Cedar Rapids	A-C
Columbia College, Dubuque	A-C
Cornell College, Mount Vernon	A-C
Drake University, Des Moines	A-C
Graceland College, Lamoni	C
Grinnell College, Grinnell	A-C
Iowa State College of Agriculture and Mechanical Arts, Ames	A-C
Iowa State Teachers College, Cedar Falls	C
Luther College, Decorah	C
Mason City Junior College,* Mason City	C
Morningside College, Sioux City	A-C
Mount Mercy Junior College,* Cedar Rapids	C
Ottumwa Heights College* (formerly St. Joseph Junior College) Ottumwa	C
Parsons College, Fairfield	C
Simpson College, Indianola	A-C
St. Ambrose College, Davenport	C
State University of Iowa, Iowa City	A-C
University of Dubuque, Dubuque	C
KANSAS	
Baker University, Baldwin City	A-C
Bethany College, Lindsborg	C
College of Emporia, Emporia	C
Fort Hays Kansas State College (formerly Kansas State Teachers College), Hays	C
Friends University, Wichita	C
Kansas State College of Agriculture and Applied Science, Manhattan	A-C
Kansas State Teachers College of Emporia, Emporia	C
Kansas State Teachers College, Pittsburg	C
Marymount College, Salina	C
Municipal University of Wichita, Wichita	C
Ottawa University, Ottawa	C
Southwestern College, Winfield	C
St. Benedict's College, Atchison	C
Sterling College, Sterling	C
The Saint Mary College, Leavenworth	C
University of Kansas, Lawrence	A-C
Washburn College, Topeka	A-C
KENTUCKY	
Bethel Woman's College,* Hopkinsville	S
Berea College, Berea	A-S
Centre College, Danville	A-S
Cumberland College,* Williamsburg	S
Eastern Kentucky State Teachers College, Richmond	S
Georgetown College, Georgetown	S
Morehead State Teachers College, Morehead	S
Murray State Teachers College, Murray	S
Nazareth Junior College, Nazareth	S
Pikeville College,* Pikeville	S
Transylvania University, Lexington	S
University of Kentucky, Lexington	A-S
University of Louisville, Louisville	S
Western Kentucky State Teachers College, Bowling Green	S
LOUISIANA	
Centenary College, Shreveport	S
Louisiana College, Pineville	S
Louisiana Polytechnic Institute, Ruston	S
Louisiana State Normal College, Natchitoches	S
Louisiana State University, Baton Rouge	A-S
Loyola University, New Orleans	S
Southwestern Louisiana Institute, Lafayette	S
Tulane University of Louisiana, including H. Sophie Newcomb Memorial College, New Orleans	A-S
MAINE	
Bates College, Lewiston	A-N
Bowdoin College, Brunswick	A-N
Colby College, Waterville	A-N
University of Maine, Orono	A-N
MARYLAND	
College of Notre Dame of Maryland, Baltimore	M
Goucher College, Baltimore	A-M
Hood College, Frederick	M
Johns Hopkins University, Baltimore	A-M
Loyola College, Baltimore	M
Morgan College, Baltimore	M
Mount St. Mary's College, Emmitsburg	M
St. John's College, Annapolis	M
St. Joseph's College, Emmitsburg	M
The United States Naval Academy, Annapolis	A
University of Maryland, College Park	A-M
Washington College, Chestertown	M
Western Maryland College, Westminster	M
MASSACHUSETTS	
Amherst College, Amherst	A-N
Boston College, Chestnut Hill	A
Boston University	A-N
Clark University, Worcester	A-N
Harvard University, Cambridge	A-N
Holy Cross College, Worcester	A-N
International Y. M. C. A. College, Springfield	N
Junior College of Bradford Academy,* Bradford	N
Lasell Seminary Junior College,* Auburndale	N
Massachusetts Agricultural College, Amherst	A
Massachusetts Institute of Technology, Cambridge	A-N
Massachusetts State College, Amherst	N
Mount Holyoke College, South Hadley	A-N
Radcliffe College, Cambridge	A-N
Simmons College, Boston	A-N
Smith College, Northampton	A-N
Tufts College, Tufts College (Medford)	A-N
Wellesley College, Wellesley	A-N
Wheaton College, Norton	A-N
Williams College, Williamstown	A-N
Worcester Polytechnic Institute, Worcester	A
MICHIGAN	
Albion College, Albion	A-C
Alma College, Alma	C
Battle Creek College, Battle Creek	C
Bay City Junior College,* Bay City	C
Calvin College, Grand Rapids	C

* Junior College.

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TABLE 1.—*Approved Colleges of Arts and Sciences and Junior Colleges—Continued*

Name of College and Location	*Authority*
College of the City of Detroit, Detroit	C
Emanuel Missionary College,* Berrien Springs	C
Flint Junior College,* Flint	C
Grand Rapids Junior College,* Grand Rapids	C
Highland Park Junior College,* Highland Park	C
Hillsdale College, Hillsdale	C
Hope College, Holland	C
Kalamazoo College, Kalamazoo	A-C
Marygrove College, Detroit	C
Michigan College of Mining and Technology, Houghton	C
Michigan State College of Agriculture and Applied Science, East Lansing	A-C
Michigan State Normal College, Ypsilanti	C
Michigan State Teachers College (Western), Kalamazoo	C
Michigan State Teachers College (Central), Mount Pleasant	C
Michigan State Teachers College (Northern), Marquette	C
Muskegon Junior College,* Muskegon	C
Port Huron Junior College,* Port Huron	C
University of Detroit, Detroit	C
University of Michigan, Ann Arbor	A-C
MINNESOTA	
Carleton College, Northfield	A-C
College of St. Catherine, St. Paul	A-C
College of St. Scholastica, Duluth	C
College of St. Teresa, Winona	A-C
College of St. Thomas, St. Paul	C
Concordia College, Moorhead	C
Duluth Junior College,* Duluth	C
Eveleth Junior College,* Eveleth	C
Gustavus Adolphus College, St. Peter	C
Hamline University, St. Paul	A-C
Hibbing Junior College,* Hibbing	C
Macalester College, St. Paul	A-C
Rochester Junior College,* Rochester	C
St. Olaf College, Northfield	A-C
University of Minnesota, Minneapolis	A-C
Virginia Junior College,* Virginia	C
MISSISSIPPI	
Blue Mountain College, Blue Mountain	S
Delta State Teachers College, Cleveland	S
Gulf Park College,* Gulfport	S
Harrison-Stone-Jackson Agricultural H. S. and Junior College,* Perkinston	S
Hinds Junior College,* Raymond	S
Millsaps College, Jackson	A-S
Mississippi College, Clinton	S
Mississippi Woman's College, Hattiesburg	S
Pearl River College,* Poplarville	S
Sunflower County Junior College,* Moorhead	S
Whitworth College,* Brookhaven	S
MISSOURI	
Central College, Fayette	A-C
Christian College,* Columbia	C
Culver-Stockton College, Canton	C
Drury College, Springfield	A-C
Junior College of Flat River,* Flat River	C
Junior College of Kansas City,* Kansas City	C
Kemper Military School,* Boonville	C
Lindenwood College, St. Charles	C
Missouri State Teachers College (Southeast), Cape Girardeau	C
Missouri State Teachers College (Northeast), Kirksville	C
Missouri State Teachers College (Northwest), Maryville	C
Missouri State Teachers College (Southwest), Springfield	C
Missouri State Teachers College (Central), Warrensburg	C
Missouri Valley College, Marshall	C
Park College, Parkville	A-C
Principia, The,* St. Louis	C
Stephens College,* Columbia	C
St. Joseph's Junior College,* St. Joseph	C
St. Louis University, St. Louis	A-C
Tarkio College, Tarkio	C
Teachers College of Kansas City,* Kansas City	C
University of Missouri, Columbia	A-C
Washington University, St. Louis	A-C
Webster College, Webster Groves	C
Wentworth Military Academy,* Lexington	C
Westminster College, Fulton	A-C
William Jewell College, Liberty	A-C
William Woods College,* Fulton	C
MONTANA	
Intermountain Union College,* Helena	C-W
Montana State College, Bozeman	A-C-W
Mount St. Charles College, Helena	C
Northern Montana College,* Havre	W
School of Mines, Butte	W
State University of Montana, Missoula	A-C-W
NEBRASKA	
Creighton University, Omaha	C
Doane College, Crete	A-C
Hastings College, Hastings	C
Nebraska Wesleyan University, Lincoln	C
Union College,* Lincoln	C
University of Nebraska, Lincoln	A-C
NEVADA	
University of Nevada, Reno	A
NEW HAMPSHIRE	
Dartmouth College, Hanover	A-N
University of New Hampshire, Durham	A-N
NEW JERSEY	
College of St. Elizabeth, Convent	A-M
Georgian Court College, Lakewood	M
New Jersey College for Women, New Brunswick	A
Princeton University, Princeton	A-M
Rutger's University, New Brunswick	A-M
Steven's Institute of Technology, Hoboken	A-M
NEW MEXICO	
New Mexico College of Agriculture and Mechanic Arts, State College	C
New Mexico State Teachers College, Silver City	C
University of New Mexico, Albuquerque	C
NEW YORK	
Adelphi College, Garden City	M
Alfred University, Alfred	A-M
Barnard College, New York	A-M
Canisius College, Buffalo	M
Clarkson School of Technology, Potsdam	M
Colgate University, Hamilton	A-M
College of Mount Saint Vincent-on-Hudson, New York	M
College of New Rochelle, New Rochelle	A-M
College of St. Rose, Albany	M
College of the City of New York, New York	A-M
College of the Sacred Heart, New York	M
Columbia University, New York	A-M
Cornell University, Ithaca	A-M
D'Youville College, Buffalo	M
Elmira College, Elmira	A-M
Fordham University, New York	A-M
Good Counsel College, White Plains	M
Hamilton College, Clinton	A-M
Hobart College, Geneva	A-M
Hunter College, New York	A-M
Keuka College, Keuka Park	M
Manhattan College, New York	M
Marymount College, Tarrytown-on-Hudson	M
Nazareth College, Rochester	M
New York State College for Teachers, Albany	A
New York University, New York	A-M
Niagara University, Niagara Falls	M
Polytechnic Institute of Brooklyn, Brooklyn	A-M
Rensselaer Polytechnic Institute, Troy	A-M
Russell Sage College, Troy	M
St. Bonaventures College, Allegany	M
St. John's College, Brooklyn	M
St. Joseph's College for Women, Brooklyn	M
St. Lawrence University, Canton	A-M
St. Stephen's College, Annandale-on-Hudson	A-M
Skidmore College, Saratoga Springs	M
Syracuse University, Syracuse	A-M
Union College, Schenectady	A-M
United States Military Academy, West Point	A
University of Buffalo	A-M
University of Rochester, Rochester	A-M
Vassar College, Poughkeepsie	A-M
Wagner Memorial Lutheran College, Staten Island	M
Wells College, Aurora	A-M
William Smith College, Geneva	M
NORTH CAROLINA	
Catawba College, Salisbury	S
Davidson College, Davidson	A-S
Duke University, Durham	A-S
East Carolina Teachers College, Greenville	S
Elon College,** Elon College	S
Greensboro College, Greensboro	S
Guilford College, Guilford	S
Lenoir Rhyne College, Hickory	S
Mars Hill College,* Mars Hill	S
Meredith College, Raleigh	A-S
North Carolina College for Women, Greensboro	S
North Carolina State College of Agriculture and Engineering, Raleigh	S
Salem College, Winston-Salem	S
St. Mary's School,* Raleigh	S
University of North Carolina, Chapel Hill	A-S
Wake Forest College, Wake Forest	S
NORTH DAKOTA	
Jamestown College, Jamestown	C
North Dakota Agricultural College, Fargo	C
University of North Dakota, University (Grand Forks)	A-C
OHIO	
Antioch College, Yellow Springs	C
Ashland College, Ashland	C
Baldwin-Wallace College, Berea	A-C
Bowling Green State College, Bowling Green	C
Capital University, Columbus	C
Case School of Applied Science, Cleveland	A-C
College of Mount St. Joseph-on-the-Ohio, Mount St. Joseph	C
College of Wooster, Wooster	A-C
Denison University, Granville	A-C
Heidelberg College, Tiffin	A-C
Hiram College, Hiram	A-C
John Carroll University, Cleveland	C
Kenyon College, Gambier	A-C

* Junior College. ** Dropped from membership, effective September 1, 1932.

TABLE 1.—*Approved Colleges of Arts and Sciences and Junior Colleges—Continued*

Name of College and Location	*Authority*
Lake Erie College, Painesville	A-C
Marietta College, Marietta	A-C
Miami University, Oxford	A-C
Mount Union College, Alliance	A-C
Muskingum College, New Concord	C
Notre Dame College, South Euclid	C
Oberlin College, Oberlin	A-C
Ohio State University, Columbus	A-C
Ohio University, Athens	A-C
Ohio Wesleyan University, Delaware	A-C
Otterbein College, Westerville	A-C
University of Akron, Akron	A-C
University of Cincinnati, Cincinnati	C
University of Dayton, Dayton	C
University of the City of Toledo, Toledo	C
Ursuline College, Cleveland	C
Western College, Oxford	A-C
Western Reserve University, Cleveland	A-C
Wittenberg College, Springfield	A-C
Xavier University (formerly St. Xavier College), Cincinnati	C
OKLAHOMA	
Northeastern Oklahoma Junior College,* Miami	C
Oklahoma Agricultural and Mechanical College, Stillwater	C
Oklahoma State College for Women, Chickasha	A-C
Panhandle Agricultural and Mechanical College,* Goodwell	C
Phillips University, Enid	C
University of Oklahoma, Norman	A-C
University of Tulsa, Tulsa	C
OREGON	
Albany College, Albany	W
Linfield College, McMinnville	W
Mount Angel College,* St. Benedict	W
Oregon Agricultural College, Corvallis	A-W
Oregon State Normal School, Monmouth	W
Pacific University, Forest Grove	W
Reed College, Portland	A-W
Southern Oregon Normal School, Ashland	W
State Normal School, La Grande	W
University of Oregon, Eugene	A-W
Willamette University, Salem	A-W
PENNSYLVANIA	
Albright College, Reading	M
Allegheny College, Meadville	A-M
Bryn Mawr College, Bryn Mawr	A-M
Bucknell University, Lewisburg	A-M
Carnegie Institute of Technology, Pittsburgh	A-M
Dickinson College, Carlisle	A-M
Drexel Institute, Philadelphia	A-M
Franklin and Marshall College, Lancaster	A-M
Geneva College, Beaver Falls	M
Gettysburg College, Gettysburg	A-M
Grove City College, Grove City	M
Haverford College, Haverford	A-M
Immaculata College, Immaculata	M
Juniata College, Huntington	M
Lafayette College, Easton	A-M
La Salle College, Philadelphia	M
Lebanon Valley College, Annville	M
Lehigh University, South Bethlehem	A-M
Lincoln University, Lincoln University	M
Marywood College, Scranton	M
Mercyhurst College, Erie	M
Moravian College (for men), Bethlehem	M
Mt. St. Joseph College, Philadelphia	M
Muhlenberg College, Allentown	A-M
Pennsylvania College for Women, Pittsburgh	M
Pennsylvania State College, State College	A-M
Rosemont College, Rosemont	M
St. Joseph's College, Philadelphia	M
St. Thomas College, Scranton	M
St. Vincent College, Latrobe	M
Seton Hill College, Greensburg	M
Susquehanna University, Selinsgrove	M
Swarthmore College, Swarthmore	A-M
Temple University, Philadelphia	M
Thiel College, Greenville	M
University of Pennsylvania, Philadelphia	A-M
University of Pittsburgh, Pittsburgh	A-M
Ursinus College, Collegeville	A-M
Villanova College, Villanova	M
Washington and Jefferson College, Washington	A-M
Westminster College, New Wilmington	A-M
Wilson College, Chambersburg	A-M
RHODE ISLAND	
Brown University, Providence	A-N
Pembroke College (Women's College of Brown University), Providence	A-N
Rhode Island State College, Kingston	N
SOUTH CAROLINA	
Clemson College, Clemson	S
Coker College, Hartsville	S
College of Charleston, Charleston	S
Converse College, Spartanburg	A-S
Erskine College, Due West	S
Furman University, Greenville	A-S
Limestone College, Gaffney	S
Presbyterian College of South Carolina, Clinton	S
The Citadel (The Military College of South Carolina), Charleston	S
University of South Carolina, Columbia	A-S
Winthrop College, Rock Hill	A-S
Wofford College, Spartanburg	A-S
SOUTH DAKOTA	
Augustana College, Sioux Falls	C
Dakota Wesleyan University, Mitchell	C
Huron College, Huron	C
Sioux Falls College,* Sioux Falls	C
South Dakota State College of Agriculture and Mechanic Arts Brookings	C
South Dakota State School of Mines, Rapid City	C
University of South Dakota, Vermilion	A-C
Yankton College, Yankton	C
TENNESSEE	
Carson and Newman College, Jefferson City	S
East Tennessee State Teachers College, Johnson City	S
Fisk University, Nashville	S
George Peabody College for Teachers, Nashville	A-S
Hiwassee College,* Madisonville	S
Maryville College, Maryville	S
Middle Tennessee State Teachers College, Murfreesboro	S
Nashville Agricultural Normal Institute,* Madison	S
Southwestern, Memphis	S
Tennessee Wesleyan College,* Athens	S
Tusculum College, Greenville	S
University of Chattanooga, Chattanooga	A-S
University of Tennessee, Knoxville	A-S
University of the South, Sewanee	A-S
Vanderbilt University, Nashville	A-S
Ward Belmont School for Young Women,* Nashville	S
West Tennessee State Teachers College, Memphis	S
TEXAS	
Agricultural and Mechanical College of Texas, College Station	S
Baylor College for Women, Belton	S
Baylor University, Waco	S
Brownsville Junior College,* Brownsville	S
College of Industrial Arts, Denton	A
East Texas State Teachers College, Commerce	S
Incarnate Word College, San Antonio	A-S
John Tarleton Agricultural College,* Stephenville	S
Lon Morris College,* Jacksonville	S
Mary Allen Seminary,* Crockett	S
North Texas State Teachers College, Denton	S
Our Lady of the Lake College, San Antonio	A-S
Rice Institute, Houston	A-S
Sam Houston State Teachers College, Huntsville	S
Simmons University, Abilene	S
Southern Methodist University, Dallas	A-S
South Park College,* Beaumont	S
South-West Texas State Teachers College, San Marcos	S
Southwestern University, Georgetown	S
Stephen F. Austin State Teachers College, Nacogdoches	S
Sul Ross State Teachers College, Alpine	S
Texarkana Junior College,* Texarkana	S
Texas Christian University, Fort Worth	A-S
Texas College of Arts and Industries,** Kingsville	S
Texas State College for Women, Denton	S
Texas Technological College, Lubbock	S
Trinity University, Waxahachie	S
Tyler Junior College,* Tyler	S
University of Texas, Austin	A-S
West Texas State Teachers College, Canyon	S
UTAH	
Agricultural College of Utah, Logan	A-W
Brigham Young University, Provo	A-W
Snow College,* Ephraim	W
University of Utah, Salt Lake City	A
Weber College,* Ogden	W
VERMONT	
Middlebury College, Middlebury	A-N
University of Vermont, Burlington	A-N
VIRGINIA	
Averett College,* Danville	S
Bridgewater College, Bridgewater	S
East Radford State Teachers College, East Radford	S

* Junior College. ** Dropped from membership, effective September 1, 1932.

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TABLE 1.—*Approved Colleges of Arts and Sciences and Junior Colleges—Continued*

Name of College and Location	*Authority*
Emory and Henry College, Emory	S
Hampden-Sidney College, Hampden-Sidney	S
Lynchburg College, Lynchburg	S
Mary Baldwin College, Staunton	S
Randolph-Macon College, Ashland	A-S
Randolph-Macon Woman's College, Lynchburg	A-S
Roanoke College, Salem	S
State Teachers College, Farmville	S
State Teachers College, Fredericksburg	S
State Teachers College, Harrisonburg	S
Sullins College,* Bristol	S
Sweet Briar College, Sweet Briar	A-S
University of Richmond, Richmond	A-S
University of Virginia, Charlottesville	A-S
Virginia Intermont College,* Bristol	S
Virginia Military Institute, Lexington	S
Virginia Polytechnic Institute, Blacksburg	S
Washington and Lee University, Lexington	A-S
William and Mary College, Williamsburg	A-S
WASHINGTON	
College of Puget Sound, Tacoma	W
Gonzaga University, Spokane	W
State College of Washington, Pullman	A-W
State Normal School, Bellingham	W
State Normal School, Cheney	W
State Normal School, Ellensburg	W
University of Washington, Seattle	A-W
Walla Walla College,* Walla Walla	W
Whitman College, Walla Walla	A-W
WEST VIRGINIA	
Bethany College, Bethany	A-C
Concord State Teachers College, Athens	C
Marshall College, Huntington	C
Potomac State School,* Keyser	C
West Virginia State College (formerly West Virginia Collegiate Institute), Institute	C
West Virginia University, Morgantown	A-C
WISCONSIN	
Beloit College, Beloit	A-C
Carroll College, Waukesha	A-C
La Crosse State Teachers College, La Crosse	C
Lawrence College, Appleton	A-C
Marquette University, Milwaukee	A-C
Milwaukee-Downer College, Milwaukee	A-C
Milwaukee State Teachers College, Milwaukee	C
Mount Mary College (formerly St. Mary's College, Prairie du Chien) Milwaukee	C
Ripon College, Ripon	A-C
State Teachers College, Oshkosh	C
Stout Institute, Menomonie	C
University of Wisconsin, Madison	A-C
WYOMING	
University of Wyoming, Laramie	A-C
CANADA	
McGill University, Montreal	A
University of Toronto, Toronto	A

* Junior College.

Minimum Standard of Education Preliminary to the Study of Medicine

Revised to September, 1931

The minimum requirement for admission to an approved medical college is a four-year high school education or its full equivalent and sixty semester hours of collegiate work, exclusive of military and physical education, extending through two years, of thirty-two weeks each, exclusive of holidays, in an accredited college. The subjects included in the two years of college work, should be in accordance with the following schedule.

SCHEDULE OF SUBJECTS OF THE TWO YEAR PREMEDICAL COLLEGE COURSE

Sixty Semester Hours † Required

Required Subjects:	Semester Hours
Chemistry (a)	12
Physics (b)	8
Biology (c)	8
English composition and literature (d)	6
Other nonscience subjects (e)	12
Subjects Strongly Urged:	**Semester Hours**
A modern foreign language (f)	6-12
Advanced botany or advanced zoology	3-6
Psychology and logic	3-6
Advanced mathematics, including algebra and trigonometry	3-6
Additional courses in chemistry	3-6
Other Suggested Electives:	
English (additional), economics, history, sociology, political science, mathematics, Latin, Greek, drawing.	

† A semester hour is the credit value of sixteen weeks' work consisting of one lecture or recitation period per week, each period to be not less than fifty minutes net, at least two hours of laboratory work to be considered as the equivalent of one lecture or recitation period.

(*a*) *Chemistry.*—Twelve semester hours required of which at least eight semester hours must be in general inorganic chemistry, including four semester hours of laboratory work and four semester hours in organic chemistry, including two semester hours of laboratory work. In the interpretation of this rule, work in qualitative analysis may be counted as general inorganic chemistry.

(*b*) *Physics.*—Eight semester hours required, of which at least two must be laboratory work. It is urged that this course be preceded by a course in trigonometry.

(*c*) *Biology.*—Eight semester hours required, of which four must consist of laboratory work. This requirement may be satisfied by a course of eight semester hours in either general biology or zoology, or by courses of four semester hours each in zoology and botany, but not by botany alone.

(*d*) *English Composition and Literature.*—The usual introductory college course of six semester hours, or its equivalent, is required.

(*e*) *Nonscience Subjects.*—Of the sixty semester hours required as the measurement of two years of college work, at least eighteen, including the six semester hours of English, should be in subjects other than the physical, chemical or biologic sciences.

(*f*) *Foreign Language.*—A reading knowledge of a modern foreign language is strongly urged. If the reading knowledge of this language is obtained on the basis of high school work, the student is urged to take another language in his college course. It is not considered advisable, however, to spend more than twelve of the required sixty semester hours on foreign languages.

(*g*) *In General.*—This premedical course in both quantity and quality must be such as to make it acceptable as the equivalent of the first two years of the course leading to the degree of Bachelor of Science or Bachelor of Arts in approved colleges of arts and sciences.

A list of colleges of arts and sciences approved by the Council on Medical Education and Hospitals is revised and published in this issue. By an approved college (of arts and sciences) is meant one whose standing has been vouched for by some standardizing agency in whose methods the Council has confidence. Colleges of liberal arts and sciences which have been approved by their district association, or by the Association of American Universities, are considered as acceptable to the Council on Medical Education and Hospitals. Other colleges of known reputability may also be considered where the students present extra credits and exceptionally high grades.

Premedical college courses given in or by professional schools, by normal schools, or advance years taken in high schools, will not be considered as acceptable unless the student's credentials are certified by the registrar of the state university of the state in which the college is located, as the equivalent of the first two years of the course leading to the Bachelor of Arts or Science degree in colleges approved by the state university.

PART II. MEDICAL EDUCATION

Executive officers of medical colleges have contributed the reports on which the following statistics are based. Acknowledgment is here made of their splendid cooperation.

DEVELOPMENTS IN MEDICAL EDUCATION

In 1928, the Council on Medical Education and Hospitals discontinued the classification A, B and C, as applied to medical schools, listing them thereafter only as approved or unapproved. There has been some confusion since that time in the use of the terms "class A" and "approved," so that in view of the fact that the term "class A" was still being generally used, a ruling was passed in June, 1931, to the effect that

> The terms "class A" and "approved," when used in reference to medical colleges, shall be synonymous and may be used interchangeably.

The University of Mississippi School of Medicine still continues on a very uncertain basis, its approval being held in abeyance until the effect of recent changes can be determined. A new governor has been elected and a new board of control for the university created. The former chancellor, Dr. Alfred Hume, has been reappointed. In order, however, to balance the budget, the appropriation for the university has been materially reduced. What the effect on the medical school will be is not yet known.

STATISTICS OF MEDICAL COLLEGES

Table 2 gives the figures for the academic year 1931-1932 for the approved medical colleges in the United States shown by classes. The total number for the first year was 6,260, for the second year 5,462, third year 4,932, and fourth year 4,885, or, respectively, 196, 76,

TABLE 2.—*Medical Students Shown by Classes*

Name of College	Enrolled During 1931-1932				
	1st	2d	3d	4th	Total
University of Alabama School of Medicine	51	56	..	..	107
University of Arkansas School of Medicine	50	54	48	46	198
University of California Medical School	61	56	57	57	231
College of Medical Evangelists	116	106	92	78	392
University of Southern California School of Medicine	54	44	30	..	128
Stanford University School of Medicine	53	48	45	49	195
University of Colorado School of Medicine	60	47	47	54	208
Yale University School of Medicine	55	50	39	54	198
Georgetown University School of Medicine	157	153	145	143	598
George Washington University School of Medicine	86	75	64	58	283
Howard University College of Medicine	64	49	50	55	218
Emory University School of Medicine	61	62	54	53	230
University of Georgia Medical Department	40	39	37	38	154
Loyola University School of Medicine	149	130	102	119	500
Northwestern University Medical School	125	130	149	151	555
University of Chicago, Rush Medical College*	..	..	..	..	207
University of Chicago, The School of Medicine of the Division of the Biological Sciences*	..	..	..	..	289
University of Illinois College of Medicine	125	145	146	123	589
Indiana University School of Medicine	121	114	104	91	430
State University of Iowa College of Medicine	100	83	98	98	379
University of Kansas School of Medicine	70	70	56	58	254
University of Louisville School of Medicine	91	74	89	86	340
Tulane University of Louisiana School of Medicine	125	122	126	110	483
Johns Hopkins University School of Medicine	70	70	72	70	282
University of Maryland School of Medicine and College of Physicians and Surgeons	114	115	88	103	420
Boston University School of Medicine	70	58	54	52	234
Harvard University Medical School	123	119	136	137	517
Tufts College Medical School	124	107	121	116	465
University of Michigan Medical School	128	120	133	133	514
Detroit College of Medicine and Surgery	102	75	71	67	315
University of Minnesota Medical School	130	137	86	112	465
University of Mississippi School of Medicine	26	27	..	..	53
University of Missouri School of Medicine	45	42	6	..	93
St. Louis University School of Medicine	102	130	115	107	514
Washington University School of Medicine	80	72	92	89	333
Creighton University School of Medicine	91	67	73	51	282
University of Nebraska College of Medicine	98	84	74	80	336
Dartmouth Medical School	17	23	..	..	40
Albany Medical College	59	23	31	27	130
Long Island College of Medicine	113	108	105	107	433
University of Buffalo School of Medicine	83	64	65	61	273
Columbia University College of Physicians and Surgeons	115	100	91	102	408
Cornell University Medical College	69	52	58	60	239
New York Homeopathic Medical College and Flower Hospital	87	89	75	81	332
University and Bellevue Hospital Medical College	148	101	122	116	479
University of Rochester School of Medicine	50	48	38	36	172
Syracuse University College of Medicine	53	53	40	47	193
University of North Carolina School of Medicine	28	37	..	..	75
Duke University School of Medicine	64	46	19	18	147
Wake Forest College School of Medicine	31	28	..	..	59
University of North Dakota School of Medicine	28	27	..	..	55
University of Cincinnati College of Medicine	90	75	75	67	307
Western Reserve University School of Medicine	78	60	62	58	258
Ohio State University College of Medicine	100	86	92	75	353
University of Oklahoma School of Medicine	69	64	56	47	236
University of Oregon Medical School	66	67	55	58	246
Hahnemann Medical College and Hospital of Philadelphia	141	113	115	112	481
Jefferson Medical College of Philadelphia	158	138	140	144	580
Temple University School of Medicine	115	111	114	108	448
University of Pennsylvania School of Medicine	120	108	140	133	501
Woman's Medical College of Pennsylvania	51	25	29	22	127
University of Pittsburgh School of Medicine	67	65	62	70	264
Medical College of the State of South Carolina	41	30	40	33	144
University of South Dakota School of Medicine	21	21	..	..	42
University of Tennessee College of Medicine	147	76	88	128*	439
Meharry Medical College	56	40	45	51	192
Vanderbilt University School of Medicine	70	45	42	53	160
Baylor University College of Medicine	120	93	77	66	356
University of Texas School of Medicine	108	83	66	71	328
University of Utah School of Medicine	35	33	..	..	68
University of Vermont College of Medicine	43	37	39	37	156
University of Virginia Department of Medicine	69	62	59	51	241
Medical College of Virginia	93	81	95	93	362
West Virginia University School of Medicine	81	61	..	..	142
University of Wisconsin Medical School	104	111	50	53	318
Marquette University School of Medicine	75	66	56	62	259
Totals for 1932	6,260	5,462	4,932	4,885	22,135
Totals for 1931	6,456	5,538	5,080	4,908	21,982

* School operated on the quarter system, and students are not promoted by classes.

EVENTS OF THE YEAR

The University of Missouri School of Medicine, which last fall inaugurated clinical teaching and offered a third year program of instruction, has been compelled to defer the establishment of the fourth year of the curriculum. For the present, at least, it will continue to operate as a two year school.

The University of Southern California School of Medicine, by means of its affiliation with the Los Angeles County General Hospital, Unit No. 1, has been giving instruction to its third year class. The Council, at its meeting on May 8, 1932, voted

> That the course for the first two years as now given continue to receive the Council's approval and that the curriculum outlined for the third and fourth years be endorsed.

148 and 123 fewer than last year. The total enrolment in the various medical colleges in the United States and Canada, as well as the number of graduates (men and women), graduates with baccalaureate degrees, teachers, tuition fees by classes, name of executive officer and the date of the beginning and ending of the session 1932-1933 is shown in table 7 on pages 738-739. The figures in this table in heavy type are the totals for each of the states. These are also shown collectively in table 3. New York, with the largest number of medical colleges, was the first in the number of medical students, having a total of 2,649; Pennsylvania was second with 2,401, and Illinois third with 2,240. There were 630 graduates in New York, 581 in Pennsylvania and 497 in Illinois.

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FIFTH YEAR MEDICAL STUDENTS

The fifteen medical colleges in the United States and Canada which require a fifth, or intern, year before the M.D. degree is conferred are listed in table 4, with the number of students enrolled in this year. There were 1,177 enrolled, as compared with 1,025 in United States schools only during 1930-1931. This year there were 1,067 fifth year students in United States schools.

TABLE 3.—*Medical Colleges, Students and Graduates by States*

State	No. Colleges	Students	Graduates
Alabama	1	107	...
Arkansas	1	108	46
California	4	946	180
Colorado	1	208	53
Connecticut	1	105	44
District of Columbia	3	1,099	246
Georgia	2	364	93
Illinois	5	2,240	467
Indiana	1	430	94
Iowa	1	3.9	99
Kansas	1	254	53
Kentucky	1	340	88
Louisiana	1	483	158
Maryland	2	792	168
Massachusetts	3	1,216	305
Michigan	2	885	196
Minnesota	1	462	129
Mississippi	1	53	...
Missouri	3	940	192
Nebraska	2	624	129
New Hampshire	1	40	...
New York	9	2,643	630
North Carolina	3	281	18
North Dakota	1	55	...
Ohio	3	918	193
Oklahoma	1	236	47
Oregon	1	246	55
Pennsylvania	6	2,401	581
South Carolina	1	144	33
South Dakota	1	42	...
Tennessee	3	821	232
Texas	2	684	138
Utah	1	68	...
Vermont	1	156	56
Virginia	2	663	140
West Virginia	1	142	...
Wisconsin	2	577	113
Totals	76	22,135	4,956

TABLE 4.—*1931-1932 Fifth Year Students in Medical Colleges Requiring the Hospital Intern Year for the M.D. Degree*

University of California Medical School	55
College of Medical Evangelists	82
Stanford University School of Medicine	43
Loyola University School of Medicine	113
Northwestern University Medical School	123
University of Chicago, School of Medicine of the Division of the Biological Sciences	12
University of Chicago, Rush Medical College	154
University of Illinois College of Medicine	124
Detroit College of Medicine and Surgery	65
University of Minnesota Medical School	176
University of Cincinnati College of Medicine	69
Marquette University School of Medicine	60
University of Manitoba Faculty of Medicine	42
Dalhousie University Faculty of Medicine	33
University of Montreal Faculty of Medicine	35
Total	1,177

TABLE 5.—*Medical Colleges, Students and Graduates*

Year	No. Colleges	Students	Graduates
1905	160	26,147	5,606
1910	131	21,526	4,440
1915	96	14,891	3,536
1920	85	13,798	3,047
1921	83	14,466	3,186
1922	81	15,635	2,520
1923	80	16,960	3,120
1924	79	17,728	3,562
1925	80	18,200	3,974
1926	79	18,840	3,902
1927	80	19,662	4,035
1928	80	20,545	4,362
1929	76	20,878	4,446
1930	76	21,197	4,565
1931	76	21,982	4,735
1932	76	22,135	4,956

NUMBER OF MEDICAL COLLEGES AND STUDENTS

The total number of undergraduate medical students in the approved schools for the session 1931-1932 (table 5) was 22,135, an increase of 153 over last year. This is the largest number of students enrolled since 1905, when 26,147 students were in attendance at the 160 medical schools then existing. The increase of 153 students over the previous year, however, is less than one half of the increase noted in the corresponding gain in 1930.

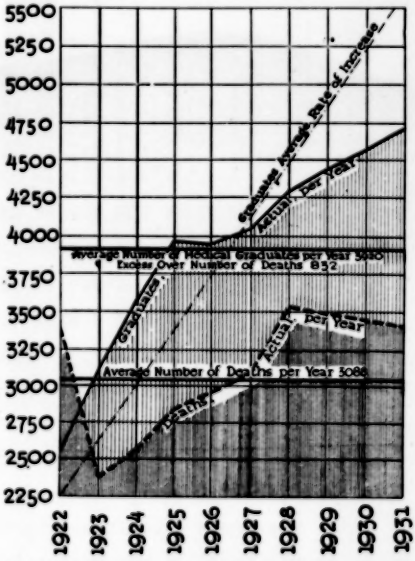

Chart 1.—Showing the increase in medical graduates and the number of deaths in the medical profession.

NUMBER OF MEDICAL GRADUATES

Since 1922 the number of medical graduates in the United States has steadily increased, as shown in chart 1. The number of graduates in 1932 exceeded those of 1931, and while the number of deaths in 1932 cannot be determined, it is believed that the graduates will represent about 50 per cent more than the loss by death in the medical profession each year.

TABLE 6.—*Women in Medicine*

Year	Women Students	Percentage of All Students	Women Graduates	Percentage of All Graduates
1905	1,073	4.1	219	4.0
1910	907	4.0	116	2.6
1915	592	4.0	92	2.6
1920	818	5.8	122	4.0
1921	910	5.0	204	5.1
1922	925	5.0	212	5.4
1923	964	4.9	189	4.7
1924	929	4.5	207	4.9
1925	925	4.4	214	4.8
1926	955	4.4	204	4.5
1931	990	4.5	217	4.6
1932	955	4.3	208	4.2

WOMEN IN MEDICINE

There were 955 women students in medical schools during the session 1931-1932 (table 6), as compared

(Continued on page 740)

TABLE 7.—STATISTICS OF APPROVED MEDICAL COLLEGES IN THE UNITED STATES AND CANADA

Marginal No.	NAME AND LOCATION OF COLLEGE	Population of City Where College Is Located, 1930 Census	Number of Students Registered 1931-1932		Graduates Since July 1, 1931		Graduates with B.S., Ph.B.	Number of Teachers	Total Fees (Dollars)				Executive Officer	Session of 1932-1933		Marginal No.
			Men	Women	Men	Women			1st Year	2d Year	3d Year	4th Year		Begins 1932	Ends 1933	
	ALABAMA		**103**	**4**	...	..	...	**21**								
1	University of Alabama School of Medicine, University (Tuscaloosa)*	30,659	103	4	...	..	...	21	221	241	...	...	Stuart Graves, M.D., Dean	Sept. 7	May 24	1
	ARKANSAS		**184**	**4**	**46**	..	**32**	**87**								
2	University of Arkansas School of Medicine, Little Rock [2]	81,679	184	4	46	..	32	87	165	160	155	155	Frank Vinsonhaler, M.D., Dean	Sept. 21	June 5	2
	CALIFORNIA		**850**	**66**	**162**	**16**	**137**	**906**								
3	University of California Medical School, Berkeley-San Francisco [1,2]	634,394†	300	31	47	8	54	365	250	225	225	225	Langley Porter, M.D., Dean	Aug. 15	May 13	3
4	College of Medical Evangelists, Loma Linda-Los Angeles [1]	1,238,048†	356	30	74	8	40	278	360	350	330	315	E. H. Risley, M.D., Dean, Loma Linda Arthur E. Coyne, M.D., Dean, Los Angeles	July 1	June 25	4
5	University of Southern California School of Medicine, Los Angeles [2]	1,238,048	150	8	...	..	...	140	426	426	426	...	Paul S. McKibben, Ph.D., Dean	Sept. 12	June 3	5
6	Stanford University School of Medicine, San Francisco [1]	634,394	182	13	41	2	43	221	387	369	360	360	Henry George Mehrtens, M.D., Dean	Oct. 1	June 19	6
	COLORADO		**201**	**7**	**52**	**1**	**23**	**107**								
7	University of Colorado School of Medicine, Denver [2]	287,861	201	7	52	1	23	107	211	231	181	191	Maurice H. Rees, M.D., Dean	Sept. 26	June 12	7
	CONNECTICUT		**164**	**11**	**42**	**2**	**44**	**254**								
8	Yale University School of Medicine, New Haven	162,655	164	11	42	2	44	254	505	500	500	530	Milton C. Winternitz, M.D., Dean	Sept. 29	June 14	8
	DISTRICT OF COLUMBIA		**1075**	**24**	**240**	**6**	**176**	**477**								
9	Georgetown University School of Medicine, Washington	486,869	508	..	134	..	106	210	445	445	360	360	William Gerry Morgan, M.D., Dean	Sept. 16	June 12	9
10	George Washington University School of Medicine, Washington	486,869	265	18	54	3	29	164	491	491	491	476	Earl B. McKinley, M.D., Dean	Sept. 21	June 3	10
11	Howard University College of Medicine, Washington	486,869	212	6	52	3	41	103	274	274	264	264	Numa P. G. Adams, M.D., Dean	Oct. 3	June 9	11
	GEORGIA		**363**	**1**	**92**	**1**	**44**	**251**								
12	Emory University School of Medicine, Atlanta	360,691	310	..	53	..	39	186	300	300	300	300	Russell H. Oppenheimer, M.D., Dean	Sept. 28	June 12	12
13	University of Georgia Medical Department, Augusta [2]	60,342	153	1	39	1	5	65	105	100	100	100	William Lorenzo Moss, M.D., Dean	Sept. 24	June 5	13
	ILLINOIS		**2147**	**93**	**470**	**27**	**429**	**1474**								
14	Loyola University School of Medicine, Chicago [1]	3,376,438	478	22	110	5	98	267	363	377	332	298	Louis D. Moorhead, M.D., Dean	Oct. 3	June 10	14
15	Northwestern University Medical School, Chicago [1]	3,376,438	740	15	112	4	73	402	355	355	355	355	Irving S. Cutter, M.D., Dean	Oct. 4	June 12	15
16	University of Chicago, Rush Medical College [1]	3,376,438	292	15	140	14	154	274	...	...	380	409	Ernest E. Irons, M.D., Dean	Oct. 3	June 13	16
17	University of Chicago, School of Medicine of the Division of the Biological Sciences [1]	3,376,438	360	29	16	3	19	240	375	375	375	375	R. C. H. Harvey, M.D., Dean of Med. Students	Oct. 3	June 14	17
18	University of Illinois College of Medicine, Chicago [1,2]	3,376,438	577	17	92	3	85	285	200	200	200	215	David John Davis, M.D., Dean	Oct. 3	June 9	18
	INDIANA		**407**	**23**	**88**	**6**	**52**	**231**								
19	Indiana University School of Medicine, Bloomington-Indianapolis [2]	364,161†	407	23	88	6	52	231	187	186	182	177	Burton D. Myers, M.D., Dean, Bloomington W. D. Gatch, M.D., Dean, Indianapolis	Sept. 13	June 12	19
	IOWA		**250**	**28**	**91**	**8**	**57**	**169**								
20	State University of Iowa College of Medicine, Iowa City [2]	15,340	250	30	91	8	57	169	192	192	192	192	Henry Spencer Houghton, M.D., Dean	Sept. 26	June 5	20
	KANSAS		**243**	**11**	**51**	**2**	**40**	**160**								
21	University of Kansas School of Medicine, Lawrence-Kansas City [2]	121,857†	243	11	51	2	40	160	162	154	155	159	H. R. Wahl, M.D., Dean, Kansas City	Sept. 22	June 12	21
	KENTUCKY		**333**	**7**	**88**	..	**41**	**143**								
22	University of Louisville School of Medicine, Louisville	307,745	333	7	88	..	41	143	365	365	370	380	John Walker Moore, M.D., Dean	Sept. 15	June 3	22
	LOUISIANA		**466**	**17**	**102**	**6**	**61**	**157**								
23	Tulane University of Louisiana School of Medicine, New Orleans	458,762	466	17	102	6	61	157	350	340	325	335	Charles Cassedy Bass, M.D., Dean	Sept. 26	June 7	23
	MARYLAND		**660**	**33**	**150**	**9**	**120**	**617**								
24	Johns Hopkins University School of Medicine, Baltimore	804,874	255	27	39	8	67	384	611	610	610	610	Alan M. Chesney, M.D., Dean	Oct. 4	June 13	24
25	University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore [2]	804,874	414	6	100	1	53	233	385	375	375	350	J. M. H. Rowland, M.D., Dean	Sept. 26	June 3	25
	MASSACHUSETTS		**1100**	**36**	**287**	**6**	**220**	**911**								
26	Boston University School of Medicine, Boston	781,188	215	19	47	5	35	167	421	396	396	406	Alexander S. Begg, M.D., Dean	Sept. 22	June 12	26
27	Harvard University Medical School, Boston	781,188	547	..	136	..	129	459	405	400	400	400	David L. Edsall, M.D., Dean	Sept. 26	June 22	27
28	Tufts College Medical School, Boston	781,188	448	17	114	3	56	285	407	402	352	370	A. Warren Stearns, M.D., Dean	Sept. 28	June 19	28
	MICHIGAN		**776**	**51**	**167**	**9**	**116**	**368**								
29	University of Michigan Medical School, Ann Arbor [2]	26,944	471	45	122	8	96	134	300	295	295	302	Arthur C. Curtis, M.D., Secretary	Sept. 26	June 19	29
30	Detroit College of Medicine and Surgery, Detroit [1,2]	1,568,662	305	6	45	1	22	134	250	250	250	250	W. H. MacCraken, M.D., Dean	Sept. 29	June 20	30
	MINNESOTA		**489**	**26**	**122**	**7**	**129**	**331**								
31	University of Minnesota Medical School, Minneapolis [1,2]	464,356	439	26	122	7	129	331	81	81	81	81	Elias P. Lyon, M.D., Dean	Oct. 3	June 17	31
	MISSISSIPPI		**51**	**2**	...	..	...	**15**								
32	University of Mississippi School of Medicine, University (Oxford)* [2,3]	2,840	51	2	...	..	...	15	201	208	...	...	P. L. Mull, M.D., Dean	Sept. 21	June 4	32
	MISSOURI		**829**	**11**	**191**	**1**	**136**	**636**								
33	University of Missouri School of Medicine, Columbia [2,3]	14,967	92	1	...	..	...	40	139	121	133	...	Edwar Allen, Ph.D., Dean	Sept. 12	June 7	33
34	St. Louis University School of Medicine, St. Louis	821,960	514	..	104	..	66	304	385	380	380	400	Alphonse M. Schwitalla, S.J., Ph.D., Dean	Sept. 21	June 1	34
35	Washington University School of Medicine, St. Louis	821,960	223	10	87	1	70	292	422	417	417	422	W. Meklm Marriott, M.D., Dean	Sept. 22	June 6	35
	NEBRASKA		**610**	**14**	**126**	**1**	**122**	**250**								
36	Creighton University School of Medicine, Omaha	214,006	283	5	50	1	46	122	396	381	356	337	John J. McInerny, S.J., Acting Dean	Sept. 22	June 1	36
37	University of Nebraska College of Medicine, Omaha	214,006	327	9	76	..	76	128	217	212	212	212	C. W. M. Poynter, M.D., Dean	Sept. 16	June 5	37
	NEW HAMPSHIRE		**46**	...	...	...	...	**27**								
38	Dartmouth Medical School, Hanover*	3,043	46	...	...	...	...	27	410	400	...	...	John P. Bowler, M.D., Dean	Sept. 22	June 20	38

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	NEW YORK		**2534**	**125**	**661**	**20**	**451**	**2366**												
39	Albany Medical College, Albany	127,412	118	2	26	1	23	138	430	405	395	395	Thomas Ordway, M.D., Dean	Sept. 26	June 12	39
40	Long Island College of Medicine, Brooklyn	2,560,401	425	8	108	2	47	224	545	560	530	560	Adam M. Miller, A.M., Dean	Oct. 3	June 10	40
41	University of Buffalo School of Medicine, Buffalo	573,076	263	10	57	2	17	225	527	522	517	517	Edward W. Koch, M.D., Dean	Oct. 3	June 14	41
42	Columbia University College of Physicians and Surgeons, New York	6,930,446	379	29	96	6	99	557	535	520	530	540	Willard C. Rappleye, M.D., Dean	Sept. 28	June 7	42
43	Cornell University Medical College, Ithaca-New York	6,930,4464	208	31	54	9	60	303	510	500	500	525	G. Canby Robinson, M.D., Director, New York	Sept. 26	June 8	43
44	New York Homeopathic Medical College and Flower Hosp., New York	6,930,446	327	5	78	..	37	169	540	530	530	560	Claude A. Burrett, M.D., Dean	Sept. 19	June 6	44
45	University and Bellevue Hospital Medical College, New York	6,930,446	458	36	110	3	113	313	545	533	522	538	John Wyckoff, M.D., Dean	Sept. 14	June 7	45
46	University of Rochester School of Medicine, Rochester	328,132	163	9	31	3	30	189	400	400	400	400	George Hoyt Whipple, M.D., Dean	Sept. 19	June 19	46
47	Syracuse University College of Medicine, Syracuse	209,326	188	5	44	3	25	188	500	500	500	510	H. G. Weiskotten, M.D., Dean	Sept. 23	June 5	47
	NORTH CAROLINA		**272**	**9**	**17**	**1**	**11**	**81**												
48	University of North Carolina School of Medicine, Chapel Hill[2]	2,999	73	2	...	..	...	12	250	250	...	...	I. H. Manning, M.D., Dean	Sept. 23	June 1	48
49	Duke University School of Medicine, Durham	52,037	140	7	17	1	11	55	450	450	450	450	Wilburt C. Davison, M.D., Dean	Oct. 3	Sept. 3	49
50	Wake Forest College School of Medicine, Wake Forest*	1,536	59	..	...	..	...	14	220	225	...	...	Thurman D. Kitchin, M.D., Dean	Sept. 13	June 1	50
	NORTH DAKOTA		**53**	**2**	...	..	...	**13**												
51	University of North Dakota School of Medicine, Grand Forks*[2]	17,112	53	2	...	..	...	13	75	75	...	...	H. E. French, M.D., Dean	Sept. 20	June 13	51
	OHIO		**676**	**43**	**166**	**7**	**166**	**500**												
52	University of Cincinnati College of Medicine, Cincinnati[1,2]	451,160	293	14	39	2	58	250	360	360	360	380	Arthur C. Bachmeyer, M.D., Dean	Sept. 19	June 10	52
53	Western Reserve University School of Medicine, Cleveland	900,429	241	17	52	5	57	225	452	415	415	425	Torald Sollmann, M.D., Dean	Sept. 15	June 15	53
54	Ohio State University College of Medicine, Columbus[2]	290,564	341	12	75	..	51	124	196	186	186	196	J. H. J. Upham, M.D., Dean	Oct. 4	June 14	54
	OKLAHOMA		**226**	**6**	**47**	..	**44**	**137**												
55	University of Oklahoma School of Medicine, Oklahoma City[4]	185,389	226	6	47	..	44	137	128	95	33	25	Lewis Jefferson Moorman, M.D., Dean	Sept. 19	June 5	55
	OREGON		**231**	**15**	**51**	**4**	**55**	**201**												
56	University of Oregon Medical School, Portland[2]	301,815	231	15	51	4	55	201	200	195	190	190	Richard B. Dillehunt, M.D., Dean	Oct. 1	June 12	56
	PENNSYLVANIA		**2237**	**164**	**548**	**33**	**466**	**1292**												
57	Hahnemann Medical College and Hospital of Philadelphia	1,950,961	481	..	111	..	58	183	405	402	352	375	William A. Pearson, M.D., Dean	Oct. 3	June 15	57
58	Jefferson Medical College of Philadelphia	1,950,961	580	..	143	..	100	248	445	430	425	425	Rose V. Patterson, M.D., Dean	Sept. 21	June 2	58
59	Temple University School of Medicine, Philadelphia	1,950,961	457	11	104	3	57	180	485	455	435	435	William N. Parkinson, M.D., Dean	Sept. 28	June 15	59
60	University of Pennsylvania School of Medicine, Philadelphia	1,950,961	487	14	129	3	125	305	510	510	510	510	William Pepper, M.D., Dean	Sept. 26	June 21	60
61	Woman's Medical College of Pennsylvania, Philadelphia	1,950,961	...	127	...	22	16	94	388	407	432	454	Martha Tracy, M.D., Dean	Sept. 21	June 7	61
62	University of Pittsburgh School of Medicine, Pittsburgh	669,817	292	12	61	5	50	222	415	400	400	410	R. R. Huggins, M.D., Dean	Sept. 26	June 7	62
	SOUTH CAROLINA		**142**	**2**	**39**	..	**26**	**80**												
63	Medical College of the State of South Carolina, Charleston	62,265	142	2	39	..	26	80	185	185	190	190	Robert Wilson, M.D., Dean	Sept. 22	June 1	63
	SOUTH DAKOTA		**41**	**1**	...	..	...	**10**												
64	University of South Dakota School of Medicine, Vermillion*[2]	2,830	41	1	...	..	...	10	100	100	...	...	Augustus G. Pohlman, M.D., Dean	Sept. 12	June 5	64
	TENNESSEE		**706**	**25**	**224**	**6**	**130**	**472**												
65	University of Tennessee College of Medicine, Memphis[3]	253,143	431	8	125	3	58	220	360	340	325	355	O. W. Hyman, Ph.D., Dean	Sept. 26	June 10	65
66	Meharry Medical College, Nashville	153,866	188	4	51	..	48	57	250	250	250	260	John J. Mullowney, M.D., President	Oct. 1	May 25	66
67	Vanderbilt University School of Medicine, Nashville	153,866	177	13	48	3	24	195	315	315	315	320	Waller S. Leathers, M.D., Dean	Sept. 27	June 14	67
	TEXAS		**662**	**22**	**133**	**5**	**60**	**164**												
68	Baylor University College of Medicine, Dallas	260,475	347	9	67	..	21	128	312	297	282	287	W. H. Moursund, M.D., Dean	Sept. 26	May 29	68
69	University of Texas School of Medicine, Galveston	52,938	315	13	66	5	48	66	82	78	66	80	George E. Bethel, M.D., Dean	Oct. 1	May 31	69
	UTAH		**67**	**1**	...	..	...	**24**												
70	University of Utah School of Medicine, Salt Lake City*	140,267	67	1	...	..	...	24	100	200	...	...	L. L. Daines, M.D., Dean	Sept. 27	June 3	70
	VERMONT		**143**	**10**	**34**	**2**	**21**	**60**												
71	University of Vermont College of Medicine, Burlington[2]	24,789	143	10	34	2	21	60	300	300	300	300	J. N. Jenne, M.D., Dean	Sept. 16	June 19	71
	VIRGINIA		**567**	**16**	**137**	**3**	**65**	**200**												
72	University of Virginia Department of Medicine, Charlottesville[2]	15,245	214	7	47	2	24	60	322	300	275	270	J. Carroll Flippin, M.D., Dean	Sept. 15	June 13	72
73	Medical College of Virginia, Richmond[2]	182,929	353	9	90	1	41	140	302	302	292	322	Lee E. Sutton, Jr., M.D., Dean	Sept. 13	May 30	73
	WEST VIRGINIA		**137**	**6**	...	..	...	**22**												
74	West Virginia University School of Medicine, Morgantown*[2]	16,186	137	6	...	..	...	22	115	115	...	...	John N. Simpson, M.D., Dean	Sept. 8	June 6	74
	WISCONSIN		**553**	**24**	**100**	**4**	**100**	**286**												
75	University of Wisconsin Medical School, Madison[2]	57,899	300	18	48	4	52	131	150	82	60	43	C. R. Bardeen, M.D., Dean	Sept. 21	June 19	75
76	Marquette University School of Medicine, Milwaukee[1]	578,249	253	6	61	..	48	165	380	379	*379	364	B. F. McGrath, M.D., Dean	Sept. 26	June 7	76
	CANADA[5]		**2418**	**116**	**475**	**20**	**212**	**1101**												
77	University of Alberta Faculty of Medicine, Edmonton, Alta	65,163	126	9	22	..	9	86	175	225	225	225	Allan Coats Rankin, M.D., Dean	Sept. 26	May 16	77
78	University of Manitoba Faculty of Medicine, Winnipeg, Man.[1]	191,998	219	22	33	1	8	125	260	250	260	260	A. T. Mathers, M.D., Dean	Sept. 22	May 27	78
79	Dalhousie University Faculty of Medicine, Halifax, N.S.[1]	57,674	140	2	34	..	15	69	277	277	282	302	H. G. Grant, M.D., Dean	Sept. 13	May 16	79
80	Queen's University Faculty of Medicine, Kingston, Ont	23,096	239	..	48	..	3	55	145	183	183	208	Frederick Etherington, M.D., Dean	Sept. 29	May 24	80
81	University of Western Ontario Medical School, London, Ont	60,085	129	11	34	..	7	71	200	200	208	233	A. B. Macallum, M.B., Dean	Sept. 21	June 2	81
82	University of Toronto Faculty of Medicine, Toronto, Ont	540,250	458	58	130	15	31	300	170	220	260	270	J. G. FitzGerald, M.D., Dean	Sept. 27	May 20	82
83	McGill University Faculty of Medicine, Montreal, Que	607,063	455	12	98	1	61	192	267	267	267	267	Charles F. Martin, M.D., Dean	Sept. 14	April 25	83
84	University of Montreal Faculty of Medicine, Montreal, Que.[1]	607,063	231	1	35	..	27	103	240	220	202	232	Louis de Lotbiniere Harwood, M.D., Dean	Sept. 15	June 15	84
85	Laval University Faculty of Medicine, Quebec, Que	94,058	255	..	51	..	51	88	160	170	160	160	Arthur Rousseau, M.D., Dean	Sept. 13	May 31	85
86	University of Saskatchewan Sch. of Med. Sciences, Saskatoon, Sask.[7]	31,234	49	3	...	..	...	12	80	80	...	...	W. S. Lindsay, M.D., Dean	Sept. 23	May 12	86

* Gives only the first two years of the medical course.

† The population for the following cities are: Berkeley, 82,109; Loma Linda, 2,509; Bloomington, 18,227; Lawrence, 13,726; Ithaca, 20,708.

1. Hospital internship required for graduation. See table 4 for the fifth year registration.

2. The following universities make an additional charge for nonresidents: Arkansas, $100; California, $300; Colorado, $132; Georgia, $200; Illinois, $100; Indiana, $75 first year, $175 next three years; Iowa, $264; Kansas, $70; Maryland, $150; Michigan, $100; Detroit, $100; Minnesota, $25; Mississippi, $50; Missouri, $30; North Carolina, $100; North Dakota, $60; Ohio State, $150; Cincinnati, $50 (nonresidents of Cincinnati); Oregon, $60; South Dakota, $50; Vermont, $75 (an activity fee of $30 is charged all students not holding academic degrees); Virginia, $20; Medical College of Virginia, $100; West Virginia, $250, and Wisconsin, $200.

3. For residents of the state the charge is reduced $50 each quarter.

4. Nonresident fee is $200.

5. See College Items for fifth and sixth year fees.

6. Effective September, 1932, the third year and the proposed fourth year will be discontinued.

7. The first two years as now given are approved and the curriculum outlined for the third and fourth years is endorsed.

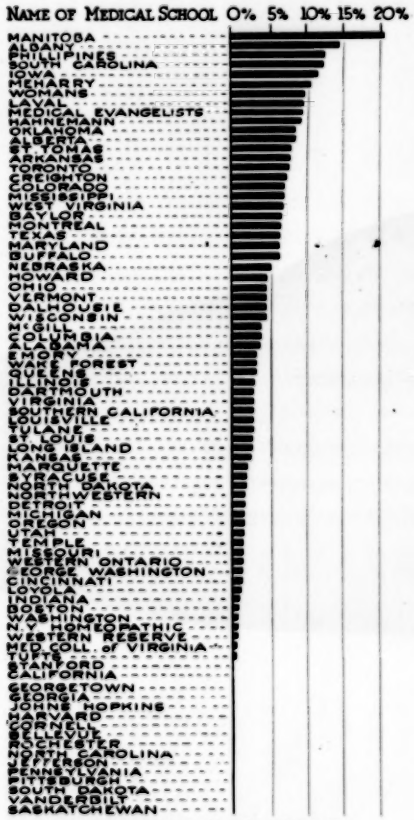
8. Approval held in abeyance until the reorganization is complete.

(Continued from page 737)

with 990 for the previous year, a decrease of 35. They constitute about 4 per cent of the total number of medical students. The number of women students has been quite constant for the past twenty years. There were 208 women graduates this year.

"REPEATERS" IN MEDICAL SCHOOLS

A preliminary report of the number of students being allowed to repeat courses in which they failed was published in THE JOURNAL last year.[1] The consolidation of the figures for the freshman year with those reported for the session of 1931-1932 was published in THE



Average reported for 1930-1931 and 1931-1932
6 schools on the quarter system not included

7.3% above 10%
23.2% between 5% and 9.9%
50% between 0.1% and 4.9%
19.5% none

Chart 2.—Showing the number of repeaters in the first year class of medical schools.

1. J. A. M. A. **96**: 1498 (May 2) 1931; **97**: 623 (Aug. 29) 1931.

TABLE 8.—*Percentage of Classes Repeating Courses in Session 1931-1932 for Scholarship*

Name of College	1st Year	2d Year	3d Year	4th Year	Total
University of Alabama School of Medicine	2.9	3.6	...	...	3.7
University of Arkansas School of Medicine	6.0	1.9	2.1	...	2.5
College of Medical Evangelists	6.9	1.9	1.1	...	2.8
University of Southern California School of Med.	1.9	...	...	...	0.8
University of Colorado School of Medicine	1.7	2.1	...	3.7	1.9
Georgetown University School of Medicine	...	...	2.1	1.4	0.8
Howard University College of Medicine	9.4	2.0	2.0	...	3.7
Emory University School of Medicine	3.3	...	...	...	1.0
Loyola University School of Medicine	0.7	...	...	...	0.2
Northwestern University Medical School	2.4	0.8	...	...	0.7
University of Illinois College of Medicine	2.9	0.7	...	...	1.0
Indiana University School of Medicine	1.7	...	...	...	0.5
State University of Iowa College of Medicine	10.0	2.4	3.1	1.0	4.2
University of Kansas School of Medicine	1.4	5.7	...	...	2.0
University of Louisville School of Medicine	3.3	4.1	...	...	1.8
Tulane University of Louisiana School of Medicine	4.8	4.1	1.6	...	2.7
University of Maryland School of Medicine and College of Physicians and Surgeons	4.4	...	...	...	1.2
Boston University School of Medicine	1.4	...	...	...	0.4
Harvard University Medical School	...	0.8	...	...	0.2
Detroit College of Medicine and Surgery	1.0	...	2.8	...	1.0
University of Mississippi School of Medicine	7.7	...	...	...	3.8
St. Louis University School of Medicine	1.9	3.1	...	...	1.4
Washington University School of Medicine	1.2	...	1.1	...	0.6
Creighton University School of Medicine	12.4	1.5	...	...	4.5
University of Nebraska College of Medicine	5.1	2.4	...	...	2.1
Dartmouth Medical School	5.9	...	...	...	2.5
Albany Medical College	15.4	4.4	6.5	...	7.5
Long Island College of Medicine	3.5	...	...	2.8	1.6
University of Buffalo School of Medicine	6.0	1.6	...	...	2.2
Columbia University College of Physicians and Surgeons	3.5	3.0	...	...	1.7
New York Homeopathic Medical College and Flower Hospital	1.1	4.5	...	...	1.5
University and Bellevue Hospital Medical College	...	...	2.5	...	0.6
Syracuse University College of Medicine	...	7.5	...	...	2.1
Wake Forest College School of Medicine	6.5	...	...	...	3.4
University of North Dakota School of Medicine	3.6	...	...	...	1.8
University of Cincinnati College of Medicine	1.1	...	...	...	0.3
Western Reserve University School of Medicine	1.3	1.7	3.2	...	1.6
Ohio State University College of Medicine	1.0	...	...	...	0.3
University of Oklahoma School of Medicine	7.2	1.6	...	...	2.5
University of Oregon Medical School	1.5	5.9	1.8	...	2.4
Hahnemann Medical College and Hospital of Philadelphia	9.9	5.3	...	...	4.2
Temple University School of Medicine	2.6	0.9	0.9	0.9	1.3
University of Pennsylvania School of Medicine	...	0.9	0.7	...	0.4
Woman's Medical College of Pennsylvania	13.7	16.0	...	...	8.7
Medical College of the State of South Carolina	12.2	...	2.5	...	4.2
Meharry Medical College	8.9	5.0	...	...	3.6
Baylor University College of Medicine	6.7	2.2	...	...	3.1
University of Texas School of Medicine	6.5	7.2	...	...	4.0
University of Utah School of Medicine	2.9	...	...	...	1.5
University of Vermont College of Medicine	2.3	...	...	...	0.6
University of Virginia Department of Medicine	2.9	3.2	...	...	1.7
Medical College of Virginia	1.1	7.4	3.2	...	2.8
West Virginia University School of Medicine	6.2	4.9	...	...	5.6
University of Wisconsin Medical School	1.9	...	...	...	0.6
Marquette University School of Medicine	...	...	3.6	...	0.8
University of Alberta Faculty of Medicine*	7.1	...	...	...	2.2
University of Manitoba Faculty of Medicine	19.3	4.3	2.8	2.3	8.7
Dalhousie University Faculty of Medicine†	...	...	...	...	1.1
Queen's University Faculty of Medicine	6.5	2.0	4.2	...	2.3
University of Western Ontario Medical School	2.4	3.7	...	..	1.4
University of Minnesota Medical School	13.6	7.0	6.7	2.6	6.4
McGill University Faculty of Medicine‡	3.1	2.1	1.2	1.1	2.1
University of Montreal Faculty of Medicine	3.8	7.1	...	...	2.2
Laval University Faculty of Medicine§	14.8	6.7	...	2.0	5.9

* Sixth year, 4.5.
† Fifth year, 6.1.
‡ Fifth year, 7.1; sixth year, 0.7.
§ Fifth year, 3.1.
‖ Fifth year, 2.8.

TABLE 9.—*Repetition in Quarter System Schools Session 1931-1932*

Name of School	Number of Students Repeating
Yale University School of Medicine	6*
University of Chicago, Rush Medical College	18†
University of Chicago, School of Medicine of the Division of the Biological Sciences	19‡
University of Minnesota Medical School	9§
University of Tennessee College of Medicine	59‖
Total	111

* Four failed the qualifying examination, and two failed the final examination.
† Repeated subjects.
‡ Failed the comprehensive examination.
§ Repeated one or more quarters.

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JOURNAL a few months ago [2] and are reproduced herewith in chart 2. Generally, it may be assumed that those schools which have a two year average of 5 per cent or less are maintaining reasonable academic standards. The percentage of classes repeating courses is shown by individual schools in table 8, referring to the session of 1931-1932. The greatest number of repeaters are, of course, students who have failed in their first year of medicine. Failures in the last two years are relatively few. There were no students repeating courses in seventeen schools, and sixteen schools had students repeating only in the first year.

Listed in table 9 are the number of students repeating courses in the schools operating under the quarter system.

NEGROES IN MEDICAL SCHOOLS

The Negro medical students for the session of 1931-1932 are recorded by classes in table 10. The total number of students and graduates for the year 1930-1931 is also shown for comparison. There were 497 Negro students enrolled in 1930-1931 and 479 during 1931-1932, a decrease of 18.

TABLE 10.—*Negro Medical Students and Graduates*

Name of College	Enrolment by Classes During 1931-1932					Graduates
	1st Year	2d Year	3d Year	4th Year	Totals	
University of California Medical School	..	..	2	..	2	..
College of Medical Evangelists	3	1	1	..	5	1
Howard University College of Medicine	62	48	49	54	213	54
Loyola University School of Medicine	..	..	1	..	1	..
University of Chicago, School of Medicine of the Division of Biological Sciences	2	..	..	..	2	..
University of Chicago, Rush Medical College	..	..	..	1	1	1
University of Illinois College of Medicine	3	..	3	2	8	1
Indiana University School of Medicine	2	..	1	1	4	1
State University of Iowa College of Medicine	..	1	..	1	2	1
University of Kansas School of Medicine	2	..	..	..	2	..
Tufts College Medical School	1	..	1	..	2	..
University of Michigan Medical School	..	3	1	..	4	..
Detroit College of Medicine and Surgery	..	1	..	2	3	1
University of Minnesota Medical School	2	..	..	1	3	1
Dartmouth Medical School	..	1	..	..	1	..
Long Island College of Medicine	1	..	1	..	2	..
Columbia University College of Physicians and Surgeons	..	2	..	..	2	..
New York Homeopathic Medical College and Flower Hospital	2	..	2	..	4	..
University and Bellevue Hospital Medical College	1	..	..	2	3	2
University of Cincinnati College of Medicine	1	..	..	..	1	..
Western Reserve University School of Medicine	1	1	1	..	3	..
Ohio State University College of Medicine	2	1	3	1	7	1
Temple University School of Medicine	..	..	..	1	1	1
University of Pennsylvania School of Medicine	..	1	..	2	3	2
Meharry Medical College	56	40	45	51	192	51
Dalhousie University Faculty of Medicine	1	..	1	1	3	..
McGill University Faculty of Medicine	2	..	1	2	5	3
Total during 1931-1932	144	100	113	122	479	122
Total during 1930-1931	137	127	114	119	497	114

TABLE 11.—*College Fees, 1931-1932*

	Colleges
Under $100	6
$100 to $200	14
200 to 300	22
300 to 400	20
400 to 500	14
Over $500	10
Totals	86

MEDICAL SCHOOL FEES

Reference is directed to table 7, in which fees charged by each medical college are recorded. In table 11, these figures have been collected to show the number of schools in various fee groups. Every college in the United States except one charging $200 or under is a state university, and three of these have fees for residents less than $100. Most state universities, however, require an additional fee of nonresidents, as is indicated in footnote 2, table 7.

STUDENTS FROM THE UNITED STATES IN OTHER SCHOOLS

The migration of medical students to European and Canadian medical schools is continuing with increasing numbers, as shown in table 12. The figures for 1931-

TABLE 12.—*Citizens of the United States Studying Medicine in Institutions in Foreign Countries*

Name of College	Totals	Students, 1931-1932	
		Enrolled	Completing Medical Course
Algeria	0	0	
Université d'Alger		0	0
Argentine Republic	0	0	
Universidad Nacional de Córdoba		0	0
Australia	0	0	
University of Adelaide		0	0
University of Melbourne		0	0
University of Sydney		0	0
Austria	188	6	
Universität Graz		9	0
Universität Innsbruck		25	1
Universität Wien		134	5
Belgium	4	0	
Université Catholique de Louvain		3	0
Université de Liege		1	0
Universiteit te Gent		0	0
Brazil	0	0	
Faculdade de Medicina da Bahia		0	0
Faculdade de Medicina de Saõ Paulo		0	0
Canada	308	62	
Dalhousie University, Halifax, N.S.		25	10
Laval University, Quebec		14	4
McGill University, Montreal, Que.		267	40
Queen's University, Kingston, Ont.		14	0
University of Alberta		0	0
University of Manitoba		2	0
University of Montreal		27	5
University of Saskatchewan		4	..
University of Toronto		2	1
University of Western Ontario		13	2
China	0	0	
Peiping Union Medical College		0	0
Universite L'Aurore, Chang-hai		0	0
Colombia	0	0	
Universidad de Cartagena		0	0
Universidad Nacional, Bogota		0	0
Czechoslovakia	1	0	
Masarykovy University V Brně		1	0
Universita Komenského		0	0
Denmark	0	0	
Kobenhavns Universitet		0	0
Dutch Indies	0	0	
Geneeskundige Hoogeschool, Batavia		0	0
Ecuador	0	0	
Universidad Central, Quito		0	0
Egypt	0	0	
Egyptian University		0	0
Kitchener School of Medicine		0	0
England	61	4	
University of Birmingham		3	0
University of Bristol		3	0
University of Durham		7	0
University of Leeds		0	0
University of Liverpool		1	0
University of London			
Charing Cross Hospital Medical School		0	0
Guy's Hospital Medical School		1	1
King's College		18	0
King's College Hospital Medical School		6	2
London Hospital Medical School		2	0
London School of Medicine for Women		5	0
Middlesex Hospital Medical School		1	0
St. Bartholomew's Hospital Medical College		2	0
St. George's Hospital Medical School		0	0
St. Mary's Hospital Medical School		0	0
St. Thomas's Hospital Medical School		0	0
University College		3	0
University College Hospital Medical School		1	0
Westminster Hospital Medical School		4	0
University of Manchester		0	0
University of Oxford		0	0
University of Sheffield		4	1

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TABLE 12.—*Citizens of the United States Studying Medicine in Institutions in Foreign Countries—Continued*

Name of College	Totals	Students, 1931-1932 Enrolled	Completing Medical Course
Finland	0	0	
Helsingfors Universitet		0	0
France	58	4	
Ecole de Médecine, Angers		0	0
Ecole de Médecine de Reims		1	0
Ecole Préparatoire de Médecine, Amiens		0	0
Ecole Préparatoire de Médecine, Nantes		0	0
Université d'Aix-Marseille		1	0
Université de Bordeaux		0	0
Université de Caen		0	0
Université de Grenoble		1	0
Université de Lille		0	0
Université de Lyon		4	2
Université de Nancy		1	0
Université de Paris		42	1
Université de Poitiers, Tours		0	0
Université de Strasbourg		5	0
Université de Toulouse		3	1
French West Africa	0	0	
Ecole de Médecine Indigène, Dakar		0	0
Germany	189	3	
Albertus-Universität, Königsberg		2	0
Eberhard-Karls Universität, Tübingen		3	0
Friedrich-Alexanders Universität, Erlangen		1	0
Friedrichs-Universität, Halle		2	0
Ludwig-Maximilians-Universität, München		56	0
Medizinische Akademie, Düsseldorf		1	0
Philipps-Universität, Marburg		1	0
Rhein. Friedrich-Wilhelms-Universität, Bonn		32	0
Schlesische Friedrich Wilhelms Universität, Breslau		1	1
Thüringische Landesuniversität, Jena		4	0
Universität Frankfurt		10	0
Universität Greifswald		0	0
Universität Heidelberg		55	0
Universität Köln		3	0
Universität Leipzig		26	2
Universität Rostock		4	0
Universität Würzburg		2	0
Greece	0	0	
National University of Athens		0	0
Honduras	0	0	
Universidad Central, Tegucigalpa		0	0
Hungary	14	2	
Magyar Királyi Erzsébet Tudományegyetem, Pecs		1	1
Magyar Királyi Ferencz József Tudományegyetem, Szeged		4	0
Magyar Királyi Petrus Pázmány Tudományegyetem, Budapest		9	1
Iceland	0	0	
Universitas Islandiae		0	0
India	0	0	
Grant Medical College, Bombay		0	0
Seth Gordhandas Sunderdas Med. College, Bombay		0	0
King Edward Medical College, Lahore		0	0
University of Lucknow		0	0
Lady Hardinge Medical College, New Delhi		0	0
Patna University		0	0
University of Rangoon		0	0
Ireland	21	0	
National University of Ireland			
University College, Cork		0	0
University College, Dublin		5	0
University College, Galway		0	0
Queen's University, Belfast		0	0
Royal College of Surgeons, Dublin		0	0
University of Dublin		16	0
Italy	198	4	
Regia Università Benito Mussolini, Bari		3	0
Regia Università di Bologna		27	1
Regia Università di Cagliari		0	0
Regia Università di Firenze		2	0
Regia Università di Genova		1	0
Regia Università di Milan		1	0
Regia Università di Modena		0	0
Regia Università di Palermo		13	0
Regia Università di Pisa		0	0
Regia Università di Roma		107	3
Regia Università di Sassari		0	0
Regia Università di Siena		1	0
Japan*	1	0	
Lithuania	4	0	
Lietuvos Universitetas, Kaunas		4	0
Malaya	0	0	
King Edward VII College of Medicine, Singapore		0	0
Malta	0	0	
University of Malta		0	0
Mexico	1	1	
Escuela de Medicina de Nuevo León, Monterrey		0	0
Escuela Libre de Homeopatia, Mexico		0	0
Escuela Medico Militar, Mexico City		0	0
Universidad Nacional, Mexico		1	1
Netherlands	0	0	
Rijks-Universiteit te Groningen		0	0
Rijks-Universiteit te Utrecht		0	0
Universiteit van Amsterdam		0	0
Universiteit van Leiden		0	0
New Zealand	0	0	
University of Otago, Dunedin		0	0
Norway	0	0	
Kongelige Frederiks Universiteits, Oslo		0	0
Philippine Islands	0	0	
University of Santo Tomas		0	0
University of the Philippines		0	0
Poland	1	0	
Uniwersytet Warszawski		1	0
Portugal	0	0	
Faculdade de Medicina do Porto		0	0
Universidade de Lisbon		0	0
Rumania	0	0	
Universitatea din Iasi		0	0
Scotland	257	25	
Anderson College of Medicine, Glasgow		78	5
School of Medicine of the Royal Colleges, Edinburgh		109	1
University of Aberdeen		10	0
University of Edinburgh		52	19
University of Glasgow		8	0
Siam	0	0	
Chulalankarana University		0	0
South Africa, Union of	1	0	
University of Cape Town		0	0
University of the Witwatersrand, Johannesburg		1	0
Spain	0	0	
Facultad de Medicina de Barcelona		0	0
Universidad de Salamanca		0	0
University of Valencia		0	0
Sweden	0	0	
Kungl. Universitet i Lund		0	0
Switzerland	214	1	
Universität Basel		15	0
Universität Bern		99	0
Universität Zurich		75	1
Université de Genève		24	0
Université de Lausanne		1	0
Université de Neuchâtel		0	0
Syria	0	0	
American University of Beirut		8	0
Faculté Francaise de Médecine, Beyrouth		0	0
Turkey	0	0	
Université Istanbul		0	0
Wales	0	0	
Welsh National School of Medicine		0	0
Yugoslavia	2	1	
Beogradskog Universiteta		0	0
Zagrebaskog Universiteta		2	1
	1,482	113	

* Name of medical school not known.

1932 have increased 50 per cent over those for 1930-1931. The distribution of these students has, however, somewhat changed, as indicated in the following table, which includes the six countries having the largest enrolment:

	1930-1931	1931-1932	Increase or Decrease
Great Britain	322	339	.....
Canada	200	208	.....
Austria	114	188	+65%
Italy	78	155	+100%
Germany	72	183	+150%
Switzerland	65	214	+230%

Doubtless one factor in the increase shown by the continental universities has been the active solicitation carried on by the Hamburg American Steamship Company. Letters received from correspondents abroad would seem to indicate that, in some cases at least, the educational standards for these migrating students are less rigid than those prevailing in this country.

RECORDS OF FOREIGN GRADUATES IN STATE LICENSING EXAMINATIONS

In table 13 is shown the record in licensing examinations of the graduates of medical schools other than those of the United States and Canada from which, within five years, five or more graduates have appeared before the various state boards of this country. The

number of candidates is 984; of schools represented, 56. Two schools with 30 graduates examined have had no failures. Forty-nine schools with 888 graduates have fairly be questioned whether state examining boards can reconcile their obligations to the citizens of their own states with the policy of admitting to the licensing

TABLE 13.—*Medical Faculties of Universities in Countries Other Than the United States and Canada Having More Than Five Graduates Examined by Licensing Boards of the United States and Possessions, 1927-1931, Inclusive*

Name of College	Number Examined	Number Passed	Number Failed	Percentage Failed
Austria				
Universität Graz	7	3	4	57.1
Universität Wien	65	43	22	33.8
Cuba				
Universidad de la Habana	18	12	6	33.3
Czechoslovakia				
Deutsche Universität, Prague	16	11	5	31.5
Karlova Universita, Prague	12	7	5	41.7
England				
Licentiate of the Royal College of Physicians and the Royal College of Surgeons	10	10	0	0.0
France				
Université de Paris	21	14	7	33.3
Germany				
Albert-Ludwigs-Universität, Freiburg	5	4	1	20.0
Albertus-Universität, Königsberg	12	4	8	66.7
Christian-Albrechts Universität, Kiel	7	3	4	57.1
Friedrich-Wilhelms-Universität, Berlin	38	23	15	39.5
Universität Wurzburg	13	5	8	61.5
Rheinische-Friedrich-Wilhelms Universität, Bonn	6	4	2	33.3
Schlesische-Friedrich-Wilhelms Universität, Breslau	7	1	6	85.7
Thüringische Landesuniversität, Jena	5	2	3	60.0
Universität Leipzig	10	5	5	50.0
Ludwig-Maximilians-Universität, München	18	11	7	38.9
Greece				
National University of Athens	55	12	43	78.2
Hungary				
Magyar Királyi Erzsébet Tudományegyetem, Pecs	5	4	1	20.0
Magyar Királyi Petrus Pázmány Tudomanyegyetem, Budapest	31	20	11	35.5
Ireland				
University College, Dublin	20	18	2	10.0
Italy				
Regia Università di Bologna	12	7	5	41.7
Regia Università di Modena	8	2	6	75.0
Regia Università di Napoli	176	41	135	76.7
Regia Università di Padova	12	3	9	75.0
Regia Università di Palermo	34	9	25	73.5
Regia Università di Pavia	7	1	6	85.7
Regia Università di Roma	42	18	24	57.1
Japan				
Nippon Medical College, Tokyo	6	3	3	50.0
Tokyo Charity Hospital Medical College	7	0	7	100.0
Tohoku Imperial University, Sendai	6	0	6	100.0
Tokyo Imperial University	8	5	3	37.5
Mexico				
Escuela de Medicina de Guadalajara	16	7	9	43.8
Escuela Libre de Homeopatia, Mexico	6	5	1	16.7
Universidad Nacional, Mexico	30	28	2	6.7
Portugal				
Faculdade de Medicina do Porto	12	3	9	75.0
Rumania				
King Ferdinand I Universitatea, Cluj	5	3	2	40.0
Scotland				
University of Edinburgh	20	20	0	0.0
University of Glasgow	6	4	2	33.3
Spain				
Universidad Central de España, Madrid	15	8	7	46.7
Switzerland				
Universität Bern	10	5	5	50.0
Universität Zurich	5	2	3	60.0
Université de Geneve	10	7	3	30.0
Université de Lausanne	6	3	3	50.0
Syria				
American University of Beirut	9	6	3	33.3
Turkey				
Université Istanbul	5	1	4	80.0
Union of Socialistic Soviet Republics				
Charkovsky Medical Institute	24	11	13	54.2
Dragomanov Medical Institute, Kiev	29	12	17	58.6
First Medical Institute, Leningrad	9	5	4	44.4
First Moscow Medical Institute	14	4	10	71.4
North Caucasian Medical Institute, Rostov-on-the-Don	9	4	5	55.6
Odessa Medical Institute	11	4	7	63.6
Saratov Medical Institute	8	3	5	62.5
Second Medical Institute, Leningrad	8	4	4	50.0
Tomsk Medical Institute	12	6	6	50.0
Voronezh Medical Institute	6	4	2	33.3
Totals	984	464	520	52.9
Number of schools with no failures				2
Number of schools with 1-25 per cent failures				5
Number of schools with 26-50 per cent failures				25
Number of schools with 51-100 per cent failures				24
Total number of schools				56

had more than 25 per cent failures. In this country no school would be approved which had so large a percentage of failures among its graduates and it may examination the graduates of schools which have consistently been characterized by a large percentage of failures.

PART III. EDUCATION OF INTERNS IN APPROVED HOSPITALS

The active cooperation of all hospitals approved for internships has again enabled the Council on Medical Education and Hospitals to present statistics concerning intern education. A total of 676 replies was received in time for tabulation on the special blank provided the hospitals for the purpose of reporting the present status of their educational programs. To date all but two of the 696 hospitals approved for interns have reported. The returns were highly satisfactory and greatly appreciated.

MEDICAL GRADUATES AND INTERNSHIPS

In table 14 is shown the number of graduates of 1931 and fifth year students who have served or are serving internships. With the exception of one in the United States and two in Canada, every school in the list has more than 90 per cent of its graduates serving internships. Excluding those schools that require the internship for graduation, 95.5 per cent of all graduates here listed have this added experience. In view of the fact that only one third of the states make it obligatory, this seems to be a remarkable showing.

The year 1931 was not an easy one for hospitals. It is gratifying to note that in the face of quite general adverse circumstances no notable regressions have occurred with respect to intern training. The hospital has seemingly entrenched itself more firmly than ever as a potent factor in medical education.

Table 15 indicates that intern service has been eminently satisfactory. More positions are offered, the number of approved hospitals has increased, and the hiatus existing between the candidates and the number of positions is greater than ever before. As pointed out in the Hospital Number of THE JOURNAL, June 11, there is at present no dearth of applicants for house positions in the hospitals because many interns are deterred from the establishment of a practice until more favorable times. These present tendencies have brought the conviction that, of the several plans now considered toward bridging the gap between the number of medical

graduates and the intern positions, the most feasible is the practice of using the same intern over longer periods of time. It may readily be seen that if the present almost universal twelve months service were extended to fifteen or eighteen months, a far greater spread of interns would occur. Another idea that is spreading slowly throughout the hospital world is the practice of contracting for intern services at different

TABLE 14.—*Graduates of 1931 and Fifth Year Students Who Have Served or Are Serving Internships*

School	Number Graduates	Number Interning
University of Arkansas	32	30
University of California	*	55
College of Medical Evangelists	*	32
Stanford University	*	43
University of Colorado	48	48
Yale University	48	45
Georgetown University	102	96
George Washington University	74	71
Howard University	54	51
Emory University	48	47
University of Georgia	25	25
Loyola University	*	113
Northwestern University	*	123
University of Chicago, School of Medicine of the Division of the Biological Sciences	*	12
University of Chicago, Rush Medical College	*	134
University of Illinois	*	124
University of Indiana	102	96
University of Kansas	58	58
University of Louisville	87	77
Tulane University of Louisiana	100	100
Johns Hopkins University	60	62
University of Maryland	91	87
Boston University	47	47
Harvard University	131	131
Tufts College	124	124
Detroit College of Medicine and Surgery	*	65
University of Michigan	162	162
University of Minnesota	*	176
St. Louis University	113	110
Washington University	78	75
Creighton University	53	14
University of Nebraska	63	61
Albany Medical College	29	27
Long Island College of Medicine	101	98
University of Buffalo	70	69
Cornell University	67	67
Columbia University	101	100
New York Homeopathic Medical College	80	80
University and Bellevue Hospital Medical College	127	121
University of Rochester	34	33
Syracuse University	36	36
University of Cincinnati	*	60
Western Reserve University	58	58
Ohio State University	78	77
University of Oklahoma	41	42
University of Oregon	59	57
Hahnemann Medical College	96	90
Jefferson Medical College	141	141
Temple University	64	60
University of Pennsylvania	134	132
Woman's Medical College of Pennsylvania	24	24
University of Pittsburgh	61	61
Medical College of South Carolina	41	41
University of Tennessee	59	56
Baylor University	72	65
University of Texas	73	70
University of Vermont	31	30
University of Virginia	47	47
Medical College of Virginia	94	91
University of Wisconsin	44	44
Marquette University	*	60
University of Alberta	31	30
University of Manitoba	*	42
Dalhousie University	*	23
Queen's University	41	39
University of Western Ontario	35	33
University of Toronto	136	118
McGill University	100	94
University of Montreal	*	35

* An internship or other acceptable clinical work is a requirement for graduation.

times during the year, so that there always will be a few experienced interns in whom confidence can be placed while the new group is becoming accustomed to new duties and hospital methods.

It is now considered axiomatic that the greater the cooperation of the staff the better the internship. In this survey an effort was made to learn which were the commonly accepted staff activities for interns and how generally they were carried into effect.

THE INTERN COMMITTEE

Intern committees represent the recognition on the part of hospital staffs that intern affairs need supervision and that the staff as a whole is too unwieldy a body to serve effectively. As a matter of fact, the intern committee itself does not serve very effectively yet it represents an advance over the older unsupervised methods of intern training.

As usually constituted, intern committees consist of three or four staff members, ordinarily appointed by the chief or president of the staff. Their duties (only occasionally mentioned in the by-laws) consist largely in making contact with students at the medical colleges, deliberating over applications, officially appointing interns, and approving schedules and regulations. The administration of disciplinary measures involved in infractions of hospital rules by the intern corps also devolves on the intern committee.

TABLE 15.—*Growth of Internships*

	1914	1920	1925	1930	1931
Number of approved hospitals	661	501	528	654	674
Medical graduates	3,594	3,047	3,974	4,765	4,735
Number of internships offered	3,665	3,430	3,842	5,531	6,154

This committee as it now exists represents a useful method of controlling the mechanics of internships. It leaves much to be desired from the point of view of controlling the actual service which the intern gives and the experience which he receives. In only a few hospitals are attempts made to stimulate the other staff members toward assuming a more active attitude regarding the training of interns. In still fewer instances are appraisals made which seek to evaluate the status of the educational program—to check improper tendencies or to supply forms of experience which all interns need and which require effort on the part of many hospitals.

It seems certain, however, that the intern committee is the anlage of the future organization of hospitals as

TABLE 16.—*Autopsy Performance in Approved Hospitals*

Percentage	Number of Hospitals			
	1926	1928	1930	1931
Over 70	14	16	19	24
50 to 70	21	45	56	62
30 to 50	68	132	164	210
15 to 30	146	240	354	395
Under 15	329	189	71	73*

* Twelve not reporting.

teaching institutions. The present paucity of intern supply shows none but transitory signs of abating, and it would appear that hospitals must offer greater opportunities to attract the available candidates. It is not so much a question of giving interns greater license in the care of patients. Development should come in the direction of more rather than less supervision, in demands for more thorough case study, more sound teaching by qualified staff members rather than the assimilation of a hundred conflicting views on patient care expressed by as many individualistic visiting physicians. Some control of these efforts must be established and one can foresee the gradual assumption on the part of the intern committee of a greater and a much more intimate grasp on the details of intern instruction.

The ground work is already prepared in all but 15 of the 676 tabulated hospitals. The replies indicate that

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the membership of these intern committees is preponderantly medical. There were eighty nonmedical names listed as members, almost entirely made up of lay superintendents whose administrative function often makes it desirable for them to occupy such a position. In all, 125 superintendents were committee members.

It was learned that intern committees meet regularly in 374 hospitals and irregularly or not at all in 302. In response to the question "What steps does the intern committee take to insure good internships?" a great variety of answers was received. Some interpreted the question in the light of steps taken by the hospital to assure itself of a good well qualified intern. Others answered as was more nearly the intention; that is, the steps taken by the intern committee, to regulate the actual service which the intern receives in the hospital.

STAFF ACTIVITIES FOR THE INTERN

The accompanying table presents the reported facts concerning the activities of staffs toward the intern. Staff members fall into three main groups with regard to their reactions to interns. One group is made up of true teachers who either by predilection or by inclination assume the principal burden of instructing the interns. Because of their interest, they receive the respect and loyalty of the house staff and it seems unnecessary to say that their patients usually receive the best care. Opposed to this small segment of the staff is a reactionary group which resents the intervention of interns in the care of their patients, and which, far from attempting to teach, assumes an entirely antagonistic attitude. It is their feeling that interns as a class are unresponsive to training, especially to that which might come from associating with others more experienced than themselves.

Midway between these two lies another group which is by far the most numerous. Its members respond to the stimulus of fresh ideas of the interns, recognizing in this system a not unimportant means for new knowledge to diffuse itself through the profession from the medical centers. They display a most wholesome cooperation toward increasing the experience of the young physicians.

The intern thrust into this milieu of conflicting opinions and points of view is obliged often to exert the most vigorous tenacity in adhering to the methods

TABLE 17.—*Staff Activities for Interns*

	Yes	No
Intern committees	661	15
Separate clinical pathologic conferences	431	245
Presence at monthly meetings	618	58
Ward rounds	645	31
Staff lectures	460	216
Record conferences	490	186
Departmental conferences	378	298
Journal clubs	83	593

taught in his medical school. Too frequently he loses some of his idealism in consideration of the inadequacies he encounters. More important, however, is the fact that nothing can efface the imprint of those few compelling personalities who have guided his first faltering footsteps and whose example must affect permanently all his contacts with future patients.

Ward rounds and required presence at the regular monthly meetings are almost universally practiced in these 676 approved hospitals. They are the oldest and possibly the best methods of intern instruction yet devised and at the same time least taxing on the time and energy of the staff members. Bedside teaching and case discussion will probably never be supplanted as a most effective teaching plan. Many conferences as now conducted are of a clinical pathologic type. Four hundred and thirty-one hospitals report that such meetings are held as separate staff functions distinct from the regular monthly meeting. The manner and frequency of presentation differ in hospitals. The pathologist is the principal factor in conducting the conferences in 337 hospitals. In 294 hospitals, presumably they are conducted by the staff alone. As to frequency, the presentations vary from monthly to

TABLE 18.—*Various Duties Required of Interns*

	1930		1934	
	Yes	No	Yes	No
Presence at necropsies	613	501	581	95
Laboratory service	598	66	485	191
Roentgen ray service	537	127	580	99
Preparation of papers	398	266	460	216
Assigned readings	153	511	225	451
Dispensary service	418	246	449	247

daily. Some report the plan of holding conferences at each necropsy. No one can estimate the benefit that emanates from these conferences, but they are now considered as the best single staff endeavor yet developed.

Table 16 indicates the increasing number of hospitals which are moving up into the higher percentage figures of necropsy performance. Insistence on adequate pathologic supervision has made possible notable advances. Three hundred and twenty-four hospitals report full time pathologists. In 628 hospitals a pathologist is said to perform the necropsies, assisted by, or under the observation of, the interns, and 235 of these pathologists are approved as qualified specialists in their field by this council.

Likewise the roentgenologist is frequently called on to teach interns either in his department or at the staff conferences. In 580 of these hospitals the interns receive some training in the department. In 239 hospitals there are full time roentgenologists. Many serve more than one hospital, so that 418 institutions have the services of men recognized as specialists in radiology by the Council on Medical Education and Hospitals.

The activities of the staff do not stop here. As the table shows, in 460 hospitals lectures are given to the interns. The customary method is for the interns to choose the subject and the speaker. In this way the interns obtain advice and accurate information on subjects concerning which they themselves most definitely feel a need. Frequently the subject matter of the lectures escapes from the province of scientific or clinical medicine into the fields of the economic and social aspects of medicine.

One reason for the great popularity of interns is the help which they give in keeping hospital records in acceptable form. In fact, there is good reason to believe that if the intern did not provide that service he would be *persona non grata* in most hospitals. History writing under such circumstances—namely, the setting down of observations on every new case admitted to the service, often ten to fifteen or more a day, is not the best plan for the hospital or the intern. The hospital gets slipshod and hastily prepared charts, and the intern develops that acute distaste for record keeping which characterizes so many present-day physicians.

Yet history taking should be an important and essential part of intern training. As now carried out in most hospitals, it has not been particularly educational but is becoming more so. In 490 hospitals, methods have been devised for teaching in connection with record keeping, together with criticisms and appraisals by staff members. Record conferences are held for the discussion of diagnostic conclusions arrived at from the history alone. At these conferences, deficiencies are also noted and improper tendencies on the part of the intern curbed.

So far, journal clubs have not gained much headway. Most approved hospitals have a library of some sort with reference texts and a selection of journals. The use of this material is desultory and unsustained. In only eighty-three hospitals does the intern benefit by reviews of the literature as presented in these clubs.

The use of the libraries, however, is stimulated in other ways. In many hospitals, interns prepare papers for presentation either before the intern staff or before the hospital staff. In more and more hospitals, definite reading assignments are being made and presumably the intern reports the results of his studies. The upkeep of the library is often a staff duty and is supported by a staff levy.

RESIDENTS IN INTERNSHIP HOSPITALS

This council has never, contrary to existing belief, required residents in internship hospitals. It is true that the presence of residents leads to better internships, or at least internships on a sounder educational basis. A resident accepts responsibility seriously, and his supervision of interns is in most instances more conscientious and certainly more constant than could be exerted by a staff member.

Interns themselves are averse to residents only as they represent a limitation of opportunity in the delivery or operating rooms. While it is only reasonable to feel that his efforts in working up a surgical case should be rewarded by an active participation in the treatment, the intervention of a resident ought not to be considered a slight or injury to the intern. The larger view of improvement in surgical practice must be taken, and it would seem that stricter regulation of surgical services for interns in hospitals would have such a tendency. More attention should be paid to diagnosis and postoperative care, to the treatment of fractures and first aid care of emergency cases as the most likely surgical conditions encountered by a young physician and for the care of which his hospital experience should primarily tend to fit him.

STATE REQUIREMENTS OF PRELIMINARY EDUCATION

There are now forty-three states (counting Alaska and the District of Columbia) which, either by law, board ruling, or both, have adopted requirements of preliminary education in addition to a standard four-year high school education. Of these, thirty-nine require the two-year standard. Before 1908, not one state had any such requirement. One state has no definite requirement of preliminary education, while six states still require only a high school education. It is interesting to note also that seventeen states now require the completion of a year's internship in a hospital before the candidate is qualified to take the professional examination. All such requirements also have been adopted since 1909.

The states, the number of college years required and the time the higher requirements became or become effective are as follows:

State Examining Board of	One Year of College Work		Two Years of College Work		A Hospital Internship	
	Affects Students Matriculating	Affects All Graduates	Affects Students Matriculating	Affects All Graduates	Affects Students Matriculating	Affects All Applicants
Alabama	.....	....	1915-16	1919	.....	....
Alaska	1910-15	1918	1918-19	1922	1912-13	1917
Arizona	1914-15	1918	1918-19	1922	.....	....
Arkansas	1915-16	1919	1918-19	1922	.....	....
California	1920-21	1924	.....	....	.....	....
Colorado	1908-09	1912	1910-11	1914	.....	....
Connecticut	1915-16	1919	.....	....	.....	....
Delaware*	.....	....	.....	....	1919-20	1924
Dist. of Columbia	.....	....	1923-26	1929	1924-25	1929
Florida	1914-15	1918	1918-19	1922	.....	....
Georgia	.....	....	1918-19	1922	.....	....
Idaho	.....	....	1915-16	1919	.....	....
Illinois	1915-16	1919	1919-20	1923	1918-19	1923
Indiana	1910-11	1914	1911-12	1915	.....	....
Iowa	.....	....	1911-12	1915	1919-20	1924
Kansas	1910-11	1914	1918-19	1922	.....	....
Kentucky	1914-15	1918	1918-19	1922	.....	....
Louisiana	1915-16	1919	1918-19	1922	.....	....
Maine	1915-16	1919	1916-17	1920	.....	....
Maryland	1914-15	1918	1918-19	1922	.....	....
Massachusetts*	.....	....	.....	....	.....	....
Michigan	1914-15	1918	1918-19	1922	1917-18	1922
Minnesota	.....	....	1908-09	1912	.....	....
Mississippi	1915-16	1919	.....	....	.....	....
Missouri*	.....	....	.....	....	.....	....
Montana	1914-15	1918	1918-19	1922	.....	....
Nebraska*	.....	....	.....	....	.....	....
Nevada*	.....	....	.....	....	.....	....
New Hampshire	.....	....	1915-16	1919	.....	....
New Jersey	1915-16	1919	1917-18	1921	1911-12	1916
New Mexico	1914-15	1918	1918-19	1922	.....	....
New York	1917-18	1921	19 8-19	1922	.....	....
North Carolina	1914-15	1918	1918-19	1922	.....	....
North Dakota	.....	....	1908-09	1912	1913-14	1918
Ohio*	.....	....	.....	....	.....	....
Oklahoma	1914-15	1918	1917-18	1921	1927-28	1932
Oregon	.....	....	1920-21	1924	.....	....
Pennsylvania	1914-15	1918	.....	....	1909-10	1914
Rhode Island	1914-15	1918	1918-19	1922	1912-13	1917
South Carolina	.....	....	1918-19	1922	.....	....
South Dakota	1908-09	1912	1911-12	1915	1920-21	1925
Tennessee	1916-17	1920	1918-19	1922	.....	....
Texas	1914-15	1918	1926-27	1930	.....	....
Utah	1913-14	1917	1922-23	1926	1921-22	1926
Vermont	1913-14	1917	1918-19	1922	.....	....
Virginia	1914-15	1918	1917-18	1921	.....	....
Washington	1914-15	1918	1918-19	1922	1914-15	1919
West Virginia	1917-18	1921	1921-22	1925	1927-28	1932
Wisconsin	.....	....	1915-16	1919	1922-23	1927
Wyoming†	.....	....	.....	....	1926-27	1931

* Requires a four-year high school education or its equivalent.
† No fixed standard.

HOSPITAL INTERNSHIP REQUIRED BY MEDICAL COLLEGES

Fourteen medical colleges in the United States and three in Canada have adopted the requirement of a fifth year to be spent by the student as an intern in an approved hospital or in other acceptable clinical work before the M.D. degree will be granted. These colleges and the years when the requirement became effective for matriculants and graduates are as follows:

UNITED STATES

	Affects Matriculants	Affects Graduates
University of Minnesota Medical School	1910-11	1915
Stanford University School of Medicine	1914-15	1919
University of Chicago, Rush Medical College	1914-15	1919
University of California Medical School	1914-15	1919
Marquette University School of Medicine	1915-16	1920
Northwestern University Medical School	1915-16	1920
University of Illinois College of Medicine	1917-18	1922
Loyola University School of Medicine	1917-18	1922
Detroit College of Medicine and Surgery	1919-20	1924
University of Cincinnati College of Medicine	1922-23	1926
College of Medical Evangelists	1922-23	1927
University of Chicago, School of Med. of the Division of the Biological Sciences	1025-26	1930
University of Oklahoma School of Medicine	1928-29	1933
University of Southern California School of Medicine	1928-29	1933

CANADA

University of Manitoba Faculty of Medicine
Dalhousie University Faculty of Medicine
University of Montreal Faculty of Medicine

HOSPITALS APPROVED FOR INTERNSHIPS

By the Council on Medical Education and Hospitals of the American Medical Association, 535 North Dearborn Street, Chicago

Revised to Aug. 27, 1932

The following general hospitals containing 221,174 beds are considered in position to furnish acceptable internships for medical graduates.

HOSPITALS, 696. INTERNSHIPS, 6,261

Name of Hospital	Location	Number of Beds: Surgical	Medical	Obstetric	Pediatric	Other	Total	Affiliated—For What Service	Internships: Number	By Examination or Appointment	Length of Service in Months	Begin	Salary per Month	Dispensary Service
ALABAMA														
Hillman Hospital	Birmingham	149	68	43	28	52	340	No	14	Ap.	12	July	No	Req.
Norwood Hospital	Birmingham	yes	yes	yes	yes	yes	210	No	3	Ap.	12	July	$30	Req.
Employees' Hospital of the Tennessee Coal, Iron and Railroad Co.	Fairfield	104	105	22	48	31	310	No	10	Ap.	12	July	$50	Req.
John A. Andrew Memorial Hospital [1] (col.)	Tuskegee Institute	35	40	yes	yes	5	80	No	3	Ap.	12	July & Sept.	80	Req.
ARIZONA														
St. Joseph's Hospital	Phoenix	77	64	14	13	20	188	No	2	Ex.	12	July	$25	Op.
ARKANSAS														
Baptist State Hospital	Little Rock	yes	yes	yes	yes	yes	340	No	2	Ap.	12	July	$50	None
Little Rock General Hospital	Little Rock	yes	yes	yes	12	12	140	No	3	Ap.	12	July	$70	Req.
St. Vincent's Infirmary	Little Rock	yes	yes	yes	yes	yes	150	No	4	Ap.	12	June	$50	None
CALIFORNIA														
General Hospital of Fresno County	Fresno	71	79	16	28	196	390	No	6	Ap.	12	July	$25	Req.
Glendale Sanitarium and Hospital	Glendale	59	150	10	..	..	220	No	3	Ap.	12	July	$65 (e)	None
Loma Linda Sanitarium and Hospital	Loma Linda	36	96	18	4	12	166	(3)	3	Ap.	12	July	$65 (e)	Req.
Seaside Hospital	Long Beach	98	78	45	..	79	300	No	3	Ap.	12	Aug.	$25	Req.
California Hospital	Los Angeles	97	48	30	26	104	307	(4)	10	Ap.	12	Feb. & July	$25	Req.
Cedars of Lebanon Hospital [1]	Los Angeles	yes	yes	34	10	..	250	No	7	Ap.	12	July	$25	Req.
Hollywood Clara Barton Memorial Hosp.	Los Angeles	73	42	54	4	69	242	No	7	Ap.	12	July	$50	None
Los Angeles County General Hospital, Unit No. 1	Los Angeles	431	517	77	156	353	1,534	No	82	Ex.	12-24	(1-a)	$10	Op.
Methodist Hospital of Southern California	Los Angeles	70	47	47	14	47	225	(5)	6	Ap.	12	(1-b)	No	Req.
St. Vincent's Hospital	Los Angeles	100	85	40	..	..	225	No	3	Ap.	12	July	$50	None
Santa Fe Coast Lines Hospital	Los Angeles	yes	yes	..	..	..	150	(6)	6	Ap.	12	July & Sept.	$22.50	Req.
White Memorial Hospital [1]	Los Angeles	yes	yes	21	6	24	136	(7)	11	Ap.	12	July	(a)	Req.
U. S. Naval Hospital	Mare Island	224	221	..	..	417	862	(8)	8	Both	12	July	(b)	Req.
Alameda County Hospitals [1]	Oakland	170	93	25	30	652	970	(9)	24	Ap.	12	July	$25	None
Orange County Hospital	Orange	21	75	10	20	157	283	No	7	Ap.	12	July	$65 (e)	Req.
Pasadena Hospital	Pasadena	105	43	26	12	24	210	(10)	3	Ap.	12	July	$75	Req.
Sacramento Hospital	Sacramento	100	195	26	16	138	475	No	10	Ap.	12	July	$50	Req.
San Bernardino General Hospital	San Bernardino	30	40	16	15	216	317	No	7	Ap.	12	July	$50	Req.
San Diego County General Hospital	San Diego	134	200	35	57	247	673	No	14	Ap.	12	July	$15-$20	Req.
U. S. Naval Hospital	San Diego	300	697	..	..	..	1,000	(11)	11	Both	12	July	(b)	Req.
French Hospital [1]	San Francisco	yes	yes	10	16	16	225	No	6	Ap.	12	July	$40 (d)	Req.
Hospital for Children [1]	San Francisco	yes	yes	44	48	47	256	No	12	Ap.	12	July	$10	Req.
Letterman General Hospital	San Francisco	427	440	10	20	127	1,024	No	14	Ap.	12	July	(b)	Req.
Mary's Help Hospital	San Francisco	yes	yes	30	20	50	160	No	4	Ap.	12	July	$25	Req.
Mount Zion Hospital	San Francisco	57	58	27	30	22	194	No	6	Ap.	12	June	$25	Req.
St. Joseph's Hospital [1]	San Francisco	118	87	29	12	32	278	No	4	Ap.	12	July	$25	None
St. Luke's Hospital [1]	San Francisco	yes	yes	25	18	26	226	No	4	Ap.	12	July	$15 (e)	Req.
St. Mary's Hospital [1]	San Francisco	128	87	37	34	..	286	No	5	Ap.	12	July	$25	Req.
San Francisco Hospital [1]	San Francisco	167	285	28	54	802	1,336	(12)	41	Ap.	12	July	$10	Op.
Southern Pacific General Hospital	San Francisco	200	200	..	..	..	400	(13)	15	Ap.	12	July	$30	Rep.
Stanford University Hospitals (including Lane Hospital) [1]	San Francisco	40	31	27	38	204	340	No	12	Ap.	12	July	$10	Req.
U. S. Marine Hospital	San Francisco	275	197	..	..	..	472	(14)	10	Ap.	12	July	(b)	None
University of California Hospital [1]	San Francisco	87	59	53	32	56	287	No	19	Ap.	12	June	$10	Req.
Santa Clara County Hospital	San Jose	53	93	22	36	292	496	No	8	Ap.	12	July	$30 (f)	Req.
St. Francis Hospital [1]	Santa Barbara	55	30	15	5	15	100	(15)	2	Ap.	12	July	$25	Req.
Santa Barbara Cottage Hospital	Santa Barbara	36	160	18	8	..	251	(15)	9	Ap.	12	July	$20	Req.
Santa Barbara General Hospital	Santa Barbara	29	50	10	14	114	217	(16)	3	Ap.	12	July	$20	Req.
COLORADO														
Boulder-Colorado Sanitarium and Hosp. [1]	Boulder	17	76	8	yes	8	109	No	1	Ap.	12	June	$50	Req.
Beth-El General Hospital	Colorado Springs	yes	yes	yes	yes	yes	104	No	1	Ap.	12	July	$25	Req.
Glockner Sanatorium and Hospital	Colorado Springs	yes	yes	yes	..	150	258	No	1	Ap.	12	July	$25	None
St. Francis Hospital [1]	Colorado Springs	yes	yes	13	yes	75	150	No	1	Ap.	12	July	$30	Op.
Colorado General Hospital [1]	Denver	yes	yes	yes	yes	yes	176	No	10	Ap.	12	Jan. & July	$25	Req.
Denver General Hospital	Denver	95	71	66	46	232	510	No	12	Ap.	18	Jan. & July	$30	Req.
Fitzsimons General Hospital	Denver	243	1,492	15	..	90	1,840	(17)	Varies	Both	12	July	(b)	None
Mercy Hospital	Denver	yes	yes	yes	yes	yes	140	(18)	4	Ap.	12	July	$25	Req.
Presbyterian Hospital [1]	Denver	yes	yes	yes	..	yes	175	No	4	Ap.	12	July	$25	None
St. Anthony's Hospital	Denver	yes	yes	23	yes	yes	300	No	4	Ap.	12	July	$25	None
St. Joseph's Hospital	Denver	yes	yes	yes	yes	yes	225	No	3	Ap.	12	July	$30	None
St. Luke's Hospital	Denver	125	34	35	25	30	249	No	6	Ap.	12	July	$25	None
CONNECTICUT														
Bridgeport Hospital	Bridgeport	37	40	60	45	218	400	No	8	Ap.	12	July	$15	Req.
St. Vincent's Hospital	Bridgeport	70	67	35	44	34	250	(19)	6	Ap.	12	July	$30	Req.
Danbury Hospital	Danbury	57	22	21	11	23	134	No	2	Ap.	12	July	$40	None
Hartford Hospital	Hartford	165	80	62	54	501	780	No	18	Ap.	18	Jan. & July	$50	None
Municipal Hospital [1]	Hartford	45	38	10	72	68	233	No	4	Ap.	12	July	$50	Req.
St. Francis Hospital	Hartford	180	160	110	30	60	540	(20)	10	Ap.	24	July	$10	Req.
Meriden Hospital	Meriden	43	36	18	15	24	136	No	3	Ap.	12	July	$25 (g)	None
Middlesex Hospital	Middletown	yes	yes	yes	yes	yes	160	No	2	Ap.	12	July & Sept.	$35 (h)	None
New Britain General Hospital	New Britain	95	40	41	31	36	243	No	4	Ap.	12	July	$30	Req.
Grace Hospital	New Haven	yes	yes	yes	yes	yes	287	No	9	Both	18	Jan. & July	(i)	Req.
Hospital of St. Raphael [1]	New Haven	125	25	30	30	40	250	No	6	Ap.	12	July	$25	Req.
New Haven Hospital [1]	New Haven	140	132	40	75	107	494	No	31	Ap.	12-30	(1-c)	No	Req.
Lawrence & Memorial Associated Hospitals	New London	22	18	35	34	121	230	No	3	Ap.	12	July	$25	None
William W. Backus Hospital	Norwich	yes	yes	yes	8	yes	155	No	2	Ap.	12	July & Sept.	$25	Req.
Stamford Hospital [1]	Stamford	92	49	43	26	57	267	No	4	Ap.	12	July	$50	Req.
St. Mary's Hospital	Waterbury	65	70	44	16	69	264	No	4	Ap.	12	July	$25	Req.
Waterbury Hospital	Waterbury	yes	yes	28	15	34	282	No	6	Ap.	12	July & Oct.	$300 yr.	Req.

Numerical and other references will be found on page 755.

Name of Hospital	Location	Number of Beds: Surgical	Medical	Obstetric	Pediatric	Other	Total	Affiliated—For What Service	Internships: Number	By Examination or Appointment	Length of Service in Months	Begin	Salary per Month	Dispensary Service
DELAWARE														
Delaware Hospital	Wilmington	40	25	24	35	76	200	No	6	Ap.	12	July	$30	Req.
DISTRICT OF COLUMBIA														
Central Disp. and Emergency Hospital	Washington	yes	yes	..	..	yes	280	No	17	Ap.	12	July	$10	Req.
Freedmen's Hospital [1] (col.)	Washington	55	55	45	32	111	298	No	24	Ap.	12	July & Oct.	$10	Req.
Gallinger Municipal Hospital [2]	Washington	163	139	116	58	264	740	No	14	Ap.	12	July	$15	None
Garfield Memorial Hospital [1]	Washington	yes	yes	yes	..	yes	311	No	9	Ap.	12	July	$10 (j)	Req.
Georgetown University Hospital	Washington	yes	yes	44	10	yes	267	No	8	Both	12	July	$10	Req.
George Washington University Hospital [1]	Washington	40	25	25	..	20	110	No	4	Ap.	12	July	$15	Req.
Providence Hospital	Washington	115	54	28	22	58	277	No	8	Ap.	12	July	$10	Req.
St. Elizabeths Hosp. [1] (Med. & Surg. Dept.)	Washington	yes	yes	..	..	yes	325	(21)	4	Both	24	July & Oct.	(b)	Req.
Sibley Memorial Hospital	Washington	91	30	75	14	100	310	No	6	Ap.	12	July	$25	Req.
U. S. Naval Hospital	Washington	84	165	..	..	188	437	(22)	8	Both	12	June	(b)	None
Walter Reed General Hospital	Washington	446	639	18	..	10	1,113	No	15	Ap.	12	July	(b)	None
Washington Sanitarium and Hospital, [1] Takoma Park	Washington	24	136	10	..	..	170	(23)	1	Ap.	12	July	$25	Req.
FLORIDA														
Duval County Hospital	Jacksonville	yes	yes	15	24	51	185	No	6	Ap.	12	July	$30	Req.
St. Luke's Hospital	Jacksonville	yes	yes	22	6	50	175	No	3	Ap.	12	July	$30	Req.
St. Vincent's Hospital	Jacksonville	yes	yes	40	30	40	240	No	2	Ap.	12	July	$40	Op.
James M. Jackson Memorial Hospital	Miami	yes	yes	yes	yes	yes	325	No	10	Ap.	12	July & Sept.	$25	Req.
Tampa Municipal Hospital [1]	Tampa	yes	yes	yes	yes	yes	192	No	5	Ap.	12	July	$25	Req.
GEORGIA														
Georgia Baptist Hospital	Atlanta	95	18	20	9	30	160	No	4	Ap.	12	July	$35 (k)	None
Grady Hospital (White Unit)	Atlanta	62	54	42	30	100	287	No	13	Both	12	July	$15	Req.
Grady Hospital (Colored Unit)	Atlanta	73	52	30	15	60	230	No	12	Both	12	July	$15	Req.
Piedmont Hospital	Atlanta	yes	yes	yes	..	yes	135	No	4	Ap.	12	July	$50	None
University Hospital [1]	Augusta	56	56	10	18	137	277	No	11	Ap.	12	July	$15	Req.
Wesley Memorial Hospital	Emory University	75	75	30	10	30	200	No	6	Ex.	12	July	$35	Req.
Macon Hospital	Macon	yes	yes	yes	yes	yes	170	No	4	Ap.	12	July	$40 (m)	Req.
ILLINOIS														
Alexian Bros. Hosp. (male patients only)	Chicago	131	115	..	10	32	288	(24)	7	Ap.	12	July	$30	None
American Hospital [1]	Chicago	60	40	25	15	10	150	No	4	Ap.	12	June	$25	None
Augustana Hospital	Chicago	yes	yes	yes	yes	yes	375	No	10	Ap.	18-24	Jan. & July	No	None
Chicago Memorial Hospital	Chicago	37	27	30	4	30	108	No	3	Ap.	12	July	$25	Req.
Columbus Hospital	Chicago	83	30	23	23	..	159	No	4	Ap.	12	July	$25	None
Cook County Hospital [1]	Chicago	625	750	250	450	1,242	3,317	No	99	Ex.	18	Jan. & July	No	None
Edgewater Hospital	Chicago	yes	yes	yes	yes	yes	140	No	5	Ap.	12	Jan. & June	$25	None
Englewood Hospital	Chicago	45	25	30	7	30	137	No	4	Ap.	12	Jan. & July	$25	None
Evangelical Hospital	Chicago	52	30	60	18	100	260	No	6	Ap.	12	July	$25 (h)	None
Frances E. Willard Hospital [1]	Chicago	44	32	27	5	32	140	No	6	Ap.	12	July	No	Req.
Garfield Park Hospital	Chicago	yes	yes	yes	yes	yes	196	No	7	Ap.	12	July	No	Op.
Grant Hospital	Chicago	60	34	50	yes	127	271	No	9	Ap.	12	July	No	Req.
Holy Cross Hospital	Chicago	yes	yes	yes	yes	yes	120	No	3	Ap.	12	June	$15	Op.
Hospital of St. Anthony de Padua	Chicago	117	40	48	15	45	265	No	6	Ap.	18	(1-b)	$10	None
Illinois Central Hospital	Chicago	yes	yes	24	..	yes	274	No	8	Ap.	18	(1-b)	$15	Req.
Illinois Masonic Hospital [1]	Chicago	yes	yes	yes	yes	yes	150	No	6	Ap.	12	July	No	Req.
Lake View Hospital [1]	Chicago	50	31	31	..	32	144	No	4	Ap.	12	July	$25	None
Lutheran Deaconess Home and Hospital	Chicago	yes	yes	44	6	42	217	No	7	Ap.	12	July	$25	None
Lutheran Memorial Hospital [1]	Chicago	50	50	25	..	..	125	No	4	Ap.	12	July	$25	Req.
Mercy Hospital	Chicago	yes	yes	yes	yes	yes	400	No	12	Ap.	12	July	No	Req.
Michael Reese Hospital [1]	Chicago	49	76	56	108	335	624	(31)	35	Ap.	24	Jan. & July	No	Op.
Mother Cabrini Memorial Hospital [1]	Chicago	59	21	33	12	45	170	No	4	Ap.	12	July	$25	None
Mount Sinai Hospital [1]	Chicago	yes	yes	44	21	44	304	No	8	Both	12	July	No	Op.
Norwegian-American Hospital	Chicago	50	50	30	10	50	190	No	6	Both	12	April & July	$30	Req.
Passavant Memorial Hospital [1]	Chicago	yes	yes	yes	yes	yes	190	No	9	Ap.	12	(1-d)	No	Req.
Presbyterian Hospital [1]	Chicago	106	67	29	50	198	450	No	28	Ap.	12-18	Varies	No	None
Provident Hospital [1] (col.)	Chicago	yes	yes	5	8	yes	65	No	6	Ap.	12	Jan. & June	No	Req.
Ravenswood Hospital [1]	Chicago	yes	yes	40	4	42	196	No	5	Ap.	12	July	$25	None
Research and Educational Hospital, University of Illinois [1]	Chicago	40	50	23	18	241	372	No	12	Ex.	12	July	No	None
Roseland Community Hospital	Chicago	yes	yes	yes	yes	yes	125	No	4	Ap.	12	July	$25 (g)	Op.
St. Anne's Hospital	Chicago	104	51	53	30	66	294	No	7	Ap.	12	June	No	Req.
St. Bernard's Hospital	Chicago	46	82	51	21	30	230	No	8	Ap.	12	July	No	None
St. Elizabeth's Hospital	Chicago	180	110	58	16	43	587	No	6	Ap.	12	July	No	Req.
St. Joseph Hospital	Chicago	155	75	55	23	53	360	No	6	Ap.	12	April & July	No	Op.
St. Luke's Hospital	Chicago	235	124	81	50	169	659	No	29	Both	12	Jan. & July	No	Req.
St. Mary of Nazareth Hospital	Chicago	122	50	38	16	24	250	No	9	Ap.	12	July	No	None
Swedish Covenant Hospital [1]	Chicago	yes	yes	45	yes	45	230	No	6	Ap.	12	March	$30	None
U. S. Marine Hospital	Chicago	35	88	..	..	27	150	(25)	5	Ap.	12	July	(b)	None
University Hospital	Chicago	52	23	10	14	22	121	No	3	Ap.	12	July	$15	Req.
University of Chicago Clinics [1]	Chicago	yes	yes	..	yes	yes	488	(26)	26	Ap.	12	(1-b)	No	Req.
Washington Boulevard Hospital	Chicago	yes	yes	yes	yes	yes	110	No	6	Ap.	18	(1-c)	No	Req.
Wesley Memorial Hospital [1]	Chicago	yes	yes	yes	yes	yes	280	No	12	Ap.	18	Jan. & July	No	None
Women and Children's Hospital [2]	Chicago	yes	yes	25	16	25	125	No	5	Ap.	12	July	No	Req.
Woodlawn Hospital	Chicago	yes	yes	yes	yes	yes	170	No	3	Ap.	12	July	No	None
Decatur and Macon County Hospital [1]	Decatur	yes	yes	24	yes	yes	165	No	3	Ap.	12	July	$25	None
St. Mary's Hospital	East St. Louis	121	84	30	25	35	295	No	4	Ap.	12	July	$25 (h)	None
Evanston Hospital	Evanston	95	56	56	39	65	271	No	12	Ap.	12	(1-b)	No	Req.
St. Francis Hospital	Evanston	125	80	50	45	50	350	No	8	Ap.	12	July	$25	None
U. S. Naval Hospital	Great Lakes	474	365	..	..	192	1,031	(27)	4	Both	12	June	(b)	Req.
St. Joseph's Hospital	Joliet	yes	yes	40	yes	40	232	No	2	Ex.	12	July	$40	Op.
Oak Park Hospital	Oak Park	45	35	33	12	50	175	No	6	Ap.	12	July	$10	None
West Suburban Hospital	Oak Park	170	45	94	30	100	427	No	12	Ap.	12	July & Oct.	No	Req.
St. Mary Hospital	Quincy	90	60	25	15	25	215	No	3	Ap.	12	July	No	None
Rockford Hospital	Rockford	yes	yes	18	9	yes	110	No	3	Ap.	12	Jan. & July	No	None
St. Anthony's Hospital	Rock Island	70	44	30	10	24	168	No	1	Ap.	12	Sept.	$35	Op.
INDIANA														
St. Catherine's Hospital	East Chicago	yes	yes	yes	yes	yes	200	No	4	Ap.	12	July	$25 (g)	None
Protestant Deaconess Hospital	Evansville	yes	yes	21	yes	yes	181	No	1	Ap.	12	June	$40	None
Fort Wayne Lutheran Hospital	Fort Wayne	80	43	25	18	23	189	No	2	Ap.	12	July	$25 (g)	None
Methodist Episcopal Hospital	Fort Wayne	71	35	16	10	..	132	No	2	Ap.	12	July	$25	Req.
St. Joseph Hospital	Fort Wayne	47	131	41	25	106	350	No	4	Ap.	12	July	$25 (g)	None
St. Mary's Mercy Hospital	Gary	60	96	50	15	35	256	No	4	Ap.	12	July	$25 (g)	None
St. Margaret's Hospital	Hammond	111	58	38	28	51	286	No	8	Ap.	12	(1-f)	$35	None
Indiana University Hospitals [1]	Indianapolis	yes	yes	yes	yes	yes	422	(28)	18	Ap.	12	July	$12.50	Req.
Indianapolis City Hospital [1]	Indianapolis	130	130	50	95	185	560	No	27	Ap.	12	July	$12.50	Req.

Numerical and other references will be found on page 755.

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Name of Hospital	Location	Number of Beds: Surgical	Medical	Obstetric	Pediatric	Other	Total	Affiliated—For What Service	Internships: Number	By Examination or Appointment	Length of Service in Months	Begin	Salary per Month	Dispensary Service
INDIANA—Continued														
Methodist Episcopal Hospital	Indianapolis	yes	yes	61	30	61	471	No	15	Ap.	12	July	$12.50	Req.
St. Vincent's Hospital [3]	Indianapolis	198	15	35	12	35	295	No	8	Ap.	12	July	$50	None
St. Elizabeth Hospital	La Fayette	yes	yes	20	18	52	256	No	4	Ap.	12	July	$50	None
Epworth Hospital	South Bend	yes	yes	30	25	37	187	No	3	Ap.	12	July	$50	None
St. Joseph Hospital	South Bend	52	52	22	21	28	175	No	2	Ap.	12	July	$75	Req.
St. Anthony's Hospital [3]	Terre Haute	yes	yes	22	14	yes	192	No	2	Ap.	12	July	$25	None
IOWA														
Mercy Hospital	Cedar Rapids	41	39	21	29	24	145	No	1	Ap.	12	July	$25	Req.
St. Luke's Methodist Hospital [3]	Cedar Rapids	55	40	22	13	20	150	No	1	Ap.	12	July	$25	None
Jennie Edmundson Memorial Hospital	Council Bluffs	yes	yes	yes	yes	yes	140	No	3	Ap.	12	June	$50	Req.
Mercy Hospital	Council Bluffs	yes	yes	21	12	14	140	No	2	Ap.	12	June	$50	None
Mercy Hospital	Davenport	54	50	16	10	44	134	No	2	Ap.	12	July	$30	None
Broadlawns—Polk County Public Hospital	Des Moines	yes	yes	20	12	12	110	No	5	Ap.	12	July	$30	Req.
Iowa Lutheran Hospital	Des Moines	70	50	35	15	40	210	No	3	Ap.	12	July	$50	None
Iowa Methodist Hospital	Des Moines	yes	yes	yes	yes	yes	270	No	6	Ap.	12	July	$45	Op.
Mercy Hospital	Des Moines	yes	yes	27	24	yes	176	(29)	4	Ap.	12	July	$35	None
University Hospitals [3]	Iowa City	yes	yes	yes	yes	yes	711	No	18	Ap.	12	July	(n)	Req.
St. Joseph's Mercy Hospital	Sioux City	yes	yes	22	16	20	200	No	3	Ap.	12	July	$25	None
KANSAS														
Bell Memorial Hospital	Kansas City	80	60	25	45	10	220	(30)	8	Ap.	12	July	$15	Req.
Bethany Methodist Hospital	Kansas City	yes	yes	25	yes	25	170	No	3	Ap.	12	July	$40	None
St. Margaret's Hospital	Kansas City	82	64	15	30	59	250	(54)	5	Ap.	12	July	$25	Req.
St. Francis Hospital	Wichita	100	75	25	30	70	300	No	4	Ap.	12	July	$30	Req.
Wesley Hospital	Wichita	106	36	27	40	26	235	(32)	4	Ap.	12	July	$40 (b)	Req.
KENTUCKY														
St. Elizabeth Hospital	Covington	105	192	32	24	22	375	No	4	Ap.	12	July	$50	Req.
Good Samaritan Hospital	Lexington	60	60	18	30	32	200	(133)	2	Ap.	12	July	$25 (m)	Op.
St. Joseph's Hospital	Lexington	yes	yes	yes	yes	yes	224	No	2	Ap.	12	July	$35	None
Louisville City Hospital [3]	Louisville	120	120	40	60	121	461	(34)	19	Ap.	12	July	$10	Req.
Norton Memorial Infirmary	Louisville	yes	yes	25	15	yes	160	No	3	Ap.	12	July	$30	Req.
St. Anthony's Hospital	Louisville	64	30	30	6	46	176	No	2	Ap.	12	July	$40	None
St. Joseph Infirmary	Louisville	135	75	28	28	60	326	No	2	Ap.	12	July	$50	None
SS. Mary and Elizabeth Hospital	Louisville	yes	yes	14	yes	18	163	No	2	Ap.	12	July	$40	None
LOUISIANA														
Charity Hospital [3]	New Orleans	yes	yes	yes	yes	yes	1,809	No	73	Ap.	12	July	$11	Req.
Flint-Goodridge Hospital of Dillard University (col.)	New Orleans	yes	yes	yes	yes	yes	100	No	5	Ap.	12	July	$10	Req.
Hotel Dieu Hospital	New Orleans	yes	yes	yes	yes	yes	261	No	6	Ap.	12	Jan. & July	$50	None
Northern Baptist Hospital [3]	New Orleans	yes	yes	27	yes	yes	225	No	8	Ap.	12	Jan. & July	$20 (o)	None
Touro Infirmary [3]	New Orleans	yes	yes	11	22	yes	373	No	16	Ap.	12	July	$15	Req.
U. S. Marine Hospital	New Orleans	107	174	..	..	219	500	(35)	15	Ap.	12	July	(b)	Req.
T. E. Schumpert Memorial Sanitarium	Shreveport	yes	yes	yes	yes	yes	156	No	2	Ap.	12	July	$75	Op.
Shreveport Charity Hospital	Shreveport	yes	yes	yes	yes	yes	441	No	12	Ap.	12	July	$10	None
MAINE														
Eastern Maine General Hospital	Bangor	yes	yes	yes	yes	yes	173	No	3	Ap.	12	July	$25-$50	Req.
Central Maine General Hospital	Lewiston	60	30	24	36	25	155	No	3	Ap.	12	July	No	None
St. Mary General Hospital	Lewiston	58	24	12	25	31	150	No	1	Ap.	12	July	$60	Req.
Maine General Hospital	Portland	yes	yes	yes	yes	yes	225	No	4	Ap.	12	July	No	Op.
MARYLAND														
Baltimore City Hospitals [3]	Baltimore	246	328	yes	..	yes	2,076	No	17	Both	12	July	$25	Req.
Church Home and Infirmary [3]	Baltimore	yes	yes	10	..	19	178	No	10	Ap.	12	July	$15	Op.
Franklin Square Hospital	Baltimore	yes	yes	18	yes	15	144	No	2	Ap.	12	July	$12.50	Req.
Hospital for Women [3]	Baltimore	yes	yes	24	..	24	135	(36)	5	Ap.	12	July	$15	None
Johns Hopkins Hospital [3]	Baltimore	198	148	79	100	284	919	No	60	Ap.	12	July & Sept.	No	Req.
Maryland General Hospital	Baltimore	yes	yes	24	21	yes	226	No	12	Ap.	12	July	$10	Req.
Mercy Hospital	Baltimore	yes	yes	yes	yes	yes	301	No	10	Ap.	12	July	No	Req.
Provident Hospital and Free Disp. (col.)	Baltimore	yes	yes	yes	yes	yes	170	No	8	Ap.	12	June & Oct.	No	Req.
St. Agnes Hospital	Baltimore	72	55	18	20	50	215	No	8	Ap.	12	July	No	Req.
St. Joseph's Hospital	Baltimore	84	46	34	33	92	289	No	13	Ap.	12	July	No	Op.
Sinai Hospital	Baltimore	yes	yes	yes	yes	yes	360	No	23	Ap.	12	July	No	Req.
South Baltimore General Hospital	Baltimore	84	10	10	11	..	115	No	6	Ap.	12	July	$25	Req.
Union Memorial Hospital	Baltimore	yes	yes	21	50	24	335	No	15	Ap.	12	July	No	Req.
U. S. Marine Hospital	Baltimore	70	91	..	..	61	222	(37)	6	Ap.	12	July	(b)	Req.
University of Maryland Hospital	Baltimore	93	67	22	24	69	275	No	13	Ap.	12	July	No	Req.
West Baltimore General Hospital	Baltimore	60	60	30	15	30	185	No	8	Ap.	12	July	$25	Req.
MASSACHUSETTS														
Beverly Hospital	Beverly	yes	yes	16	26	yes	141	No	3	Ap.	12	(1-g)	$25	Op.
Beth Israel Hospital	Boston	102	71	..	25	..	198	No	11	Ex.	30	(1-d)	No	Req.
Boston City Hospital [3]	Boston	394	444	72	104	1,369	2,383	No	87	Both	12-24	Varies	No	Req.
Carney Hospital	Boston	68	75	18	23	26	210	No	13	Both	12-30	(1-h)	No	Req.
Long Island Hospital [3]	Boston	50	281	29	125	65	550	No	6	Both	12	July	$50	Req.
Massachusetts General Hospital [3]	Boston	212	139	..	30	24	405	No	40	Both	12-25	(1-h)	No	Req.
Massachusetts Memorial Hospitals [3]	Boston	yes	yes	91	40	yes	604	No	12	Ap.	12	July	No	Req.
New England Hospital for Women and Children, [3] Roxbury	Boston	35	15	75	60	75	260	No	6	Ap.	12	July	No	Req.
Peter Bent Brigham Hospital	Boston	94	94	..	..	58	246	No	25	Ex.	12-16½	Varies	No	Req.
St. Elizabeth's Hospital, Brighton	Boston	84	58	59	40	59	300	No	7	Both	24	(1-h)	No	Req.
Brockton Hospital	Brockton	yes	yes	24	yes	27	158	No	3	Ap.	12	June	$25	Req.
Cambridge Hospital	Cambridge	yes	yes	50	75	74	300	(36)	6	Both	18	(1-h)	No	Req.
U. S. Naval Hospital	Chelsea	300	493	..	..	..	793	(39)	10	Both	12	July	(b)	None
Fall River General Hospital	Fall River	40	51	..	25	165	281	No	3	Ap.	12	(1-p)	$492 yr.	Req.
Union Hospital	Fall River	yes	yes	yes	..	yes	175	No	2	Both	12	July	$30-$50	Req.
Burbank Hospital	Fitchburg	yes	yes	25	27	35	311	No	2	Ap.	12	July	$25	Req.
Providence Hospital	Holyoke	yes	yes	23	14	yes	140	No	2	Both	12	July	$25	None
Lawrence General Hospital	Lawrence	yes	yes	30	24	yes	152	No	2	Ap.	12	June	$10	Req.
Lowell General Hospital	Lowell	yes	yes	30	14	55	180	No	1	Ex.	12	July	$25	Req.
St. John's Hospital	Lowell	yes	yes	20	27	24	157	No	3	Ap.	12	June	No	Req.
Lynn Hospital	Lynn	51	50	46	30	46	303	No	4	Ap.	12	June & July	$300 yr.	Req.
St. Luke's Hospital	New Bedford	yes	yes	yes	yes	yes	330	No	4	Ap.	12	July	No	Req.
Newton Hospital	Newton	66	50	46	16	112	290	No	4	Ex.	12	June & July	No	Req.
House of Mercy Hospital	Pittsfield	25	25	32	26	114	222	No	2	Ap.	12	July	$20	Op.
Salem Hospital	Salem	yes	yes	27	19	yes	180	No	3	Both	12	July	$25	Req.
Mercy Hospital	Springfield	164	54	52	50	50	370	No	4	Ap.	12	July	$25	Req.

Numerical and other references will be found on page 755.

Name of Hospital	Location	Number of Beds						Internships						
		Surgical	Medical	Obstetric	Pediatric	Other	Total	Affiliated—For What Service	Number	By Examination or Appointment	Length of Service in Months	Begin	Salary per Month	Dispensary Service
MASSACHUSETTS—Continued														
Springfield Hospital	Springfield	yes	yes	..	yes	yes	171	(40)	9	Both	18	Jan. & July	No	Req.
Waltham Hospital [1]	Waltham	yes	yes	53	yes	yes	216	No	4	Ap.	12	Varies	No	Req.
Memorial Hospital	Worcester	yes	yes	30	24	yes	215	No	9	Ap.	18	(1-i)	No	Req.
St. Vincent Hospital	Worcester	yes	yes	yes	yes	yes	277	No	1	Ap.	12	July	No	None
Worcester City Hospital	Worcester	135	110	32	30	93	400	No	16	Ex.	24	(1-j)	No	Req.
MICHIGAN														
St. Joseph's Mercy Hospital	Ann Arbor	60	30	20	15	15	130	(41)	2	Ap.	12	July	$25	Op.
University Hospital [1]	Ann Arbor	190	215	76	110	689	1,280	(42)	30	Ap.	12	July	No	Op.
Leila Y. Post Montgomery Hospital	Battle Creek	yes	yes	yes	yes	yes	300	No	2	Ap.	12	July	$25	Req.
Mercy Hospital	Bay City	35	22	20	29	54	160	No	2	Ap.	12	July	$50	Req.
City of Detroit Receiving Hospital	Detroit	175	200	..	58	287	720	(43)	32	Ap.	12	July	$25	Req.
Evangelical Deaconess Hosp.tal	Detroit	55	35	20	5	20	135	(43)	2	Ap.	12	July	$25	Req.
Grace Hospital [1]	Detroit	108	78	31	68	141	426	(43)	24	Ap.	12	July & Sept.	$25	Req.
Harper Hospital	Detroit	364	114	100	..	172	750	(44)	40	Ap.	12	July	No	Op.
Henry Ford Hospital [1]	Detroit	yes	yes	65	80	50	574	No	26	Both	12	(1-g)	$125 (c)	Op.
Providence Hospital	Detroit	yes	yes	yes	yes	yes	450	(45)	15	Both	12	July	$25	Req.
St. Joseph's Mercy Hospital	Detroit	118	yes	24	18	32	170	No	5	Ap.	12	July	$25	Req.
St. Mary's Hospital	Detroit	165	100	30	50	30	375	(46)	10	Ap.	12	July	$25	Req.
Eloise Infirmary	Eloise	yes	yes	..	..	yes	3,871	(43)	16	Ap.	12	July	$25	Req.
Hurley Hospital [1]	Flint	122	121	55	35	97	430	No	12	Ap.	12	July	$25	Op.
Blodgett Memorial Hospital [1]	Grand Rapids	yes	yes	20	14	yes	150	No	5	Ap.	12	July	No	Req.
Butterworth Hospital	Grand Rapids	92	42	50	26	60	270	No	6	Ap.	12	July	$10	Req.
St. Mary's Hospital	Grand Rapids	118	45	35	30	35	253	(47)	6	Ap.	12	July	$25	Req.
Highland Park General Hospital	Highland Park	yes	yes	30	14	65	195	No	7	Ap.	12	July & Sept.	$25	Req.
W. A. Foote Memorial Hospital	Jackson	yes	yes	34	7	23	156	(48)	3	Ap.	12	July	$50	Req.
Edward W. Sparrow Hospital	Lansing	yes	yes	yes	yes	yes	143	No	2	Ap.	12	July	$50	None
St. Lawrence Hospital	Lansing	yes	yes	yes	yes	yes	128	No	2	Ap.	12	July	$50	None
Hackley Hospital [1]	Muskegon	yes	yes	17	15	24	125	No	2	Ap.	12	July	$50	None
Mercy Hospital	Muskegon	25	25	25	12	37	124	(49)	2	Ap.	12	July	$0	Op.
Saginaw General Hospital	Saginaw	51	38	25	15	27	156	No	3	Ap.	12	July	$45	Req.
St. Mary's Hospital	Saginaw	88	30	20	18	20	176	No	3	Ap.	12	July	$45	Req.
MINNESOTA														
St. Luke's Hospital	Duluth	93	58	30	36	63	270	No	6	Ap.	12	Jan. & July	$12.50	Req.
St. Mary's Hospital	Duluth	84	66	30	30	80	290	No	8	Ap.	12	(1-u)	$12.50	Req.
Abbott Hospital [1]	Minneapolis	25	30	18	45	..	108	No	4	Ap.	12	Jan. & July	$25	None
Asbury Hospital [1]	Minneapolis	68	50	25	..	20	163	No	4	Ap.	12	(1-h)	$25	Req.
Eitel Hospital	Minneapolis	yes	yes	yes	yes	yes	120	No	3	Ap.	12	July	$25	Op.
Fairview Hospital	Minneapolis	yes	yes	30	10	57	227	(50)	6	Ap.	12	Jan. & July	$25	None
Lutheran Deaconess Home and Hospital	Minneapolis	yes	yes	yes	yes	yes	150	No	3	Ap.	12	July	$25	None
Minneapolis General Hospital [1]	Minneapolis	yes	yes	yes	yes	yes	644	(51)	27	Ap.	12	Jan. & July	No	Req.
Northwestern Hospital [1]	Minneapolis	yes	yes	yes	yes	yes	300	No	3	Ap.	12	Jan. & July	$25 (h)	None
St. Barnabas Hospital	Minneapolis	yes	yes	23	12	23	166	No	2	Ap.	12	July	$25	None
St. Mary's Hospital	Minneapolis	139	54	39	58	30	300	No	6	Ap.	12	April & July	$25	Req.
Swedish Hospital	Minneapolis	163	51	42	15	42	313	No	5	Ap.	12	July	$25	Req.
University Hospital [1]	Minneapolis	114	90	24	88	74	390	(52)	21	Ap.	12	(1-b)	No	Req.
Ancker Hospital	St. Paul	yes	yes	yes	yes	yes	1,050	No	24	Ap.	12	July	No	Req.
Bethesda Hospital	St. Paul	yes	yes	yes	yes	yes	110	No	2	Ap.	12	July	$25	Req.
Charles T. Miller Hospital	St. Paul	yes	yes	21	24	21	216	(53)	6	Ap.	12	July	$50	Req.
Midway Hospital	St. Paul	yes	yes	27	yes	yes	127	No	1	Ap.	12	July	$25	Req.
Northern Pacific Beneficial Association Hosp.	St. Paul	yes	yes	yes	..	..	162	No	2	Ap.	12	July	$25	Req.
St. Joseph's Hospital	St. Paul	120	65	30	31	24	270	(50)	6	Ap.	12	July	$25	None
MISSOURI														
St. Louis County Hospital	Clayton	50	50	50	20	48	198	No	3	Ap.	12	July	$25	None
Kansas City General Hospital	Kansas City	60	56	35	24	185	400	No	24	Ap.	12	July	$25	Req.
Kansas City General Hospital No. 2 (col.)	Kansas City	45	60	26	25	118	274	No	12	Ap.	12	July	$30	Req.
Research Hospital	Kansas City	yes	yes	yes	yes	yes	225	No	6	Ap.	12	July	$25	None
St. Joseph Hospital	Kansas City	119	60	22	23	36	256	No	5	Ap.	12	July	$25 (g)	Req.
St. Luke's Hospital	Kansas City	yes	yes	28	yes	64	240	No	8	Ap.	12	July	$75	None
St. Mary's Hospital	Kansas City	yes	yes	..	yes	yes	175	(54)	6	Ap.	12	July	$50	None
Trinity Lutheran Hospital	Kansas City	40	32	50	..	47	169	No	4	Ap.	12	July	$40	None
Missouri Methodist Hospital [1]	St. Joseph	110	50	15	25	90	290	No	5	Ap.	12	July	$0	Req.
St. Joseph's Hospital	St. Joseph	yes	yes	16	12	yes	150	No	2	Ap.	12	July	$0	None
Alexian Bros. Hosp. (male patients only)	St. Louis	67	68	..	..	115	250	(55)	5	Ap.	12	July	$25	Req.
Barnes Hospital	St. Louis	yes	yes	..	..	yes	270	(56)	32	Ap.	12-18	Jan. & July	No	Op.
Christian Hospital	St. Louis	40	35	25	10	15	125	No	3	Ap.	12	July	$50	Req.
De Paul Hospital	St. Louis	yes	yes	60	30	yes	230	(57)	7	Ap.	12	July	$10 (k)	Req.
Evangelical Deaconess Home and Hospital	St. Louis	60	30	20	15	32	168	No	4	Ap.	12	July	$25 (h)	None
Jewish Hospital	St. Louis	160	100	33	24	33	250	No	11	Ap.	12	July	$75	Op.
Lutheran Hospital	St. Louis	yes	yes	yes	yes	yes	197	No	3	Ap.	12	July	$25 (g)	Req.
Missouri Baptist Hospital	St. Louis	yes	yes	41	34	yes	300	No	10	Ap.	12	July	$25	None
St. Anthony's Hospital	St. Louis	160	44	40	16	50	250	No	6	Ap.	12	July	$25	None
St. John's Hospital	St. Louis	125	100	36	39	31	331	No	12	Ap.	12	July	$0	Op.
St. Louis City Hospital	St. Louis	150	260	84	60	246	840	(58)	54	Ap.	12	July	$10 (k)	Op.
St. Louis City Hospital No. 2 (col.)	St. Louis	100	130	53	50	177	500	No	15	Ap.	12	July	$0 (k)	Req.
St. Luke's Hospital	St. Louis	yes	yes	yes	yes	yes	210	No	7	Ap.	12	July	$25	Req.
St. Mary's Group of Hospitals	St. Louis	135	100	50	30	250	565	(59)	22	Ap.	12	July	No	Req.
MONTANA														
St. James Hospital	Butte	71	44	13	13	17	158	No	2	Ap.	12	July	$60	Req.
NEBRASKA														
St. Francis Hospital [1]	Grand Island	76	18	16	20	..	130	No	2	Ap.	12	July	$50	None
Lincoln General Hospital	Lincoln	41	41	22	30	26	160	No	2	Ap.	12	July	$25	Op.
St. Elizabeth's Hospital	Lincoln	yes	yes	yes	yes	yes	300	No	2	Ap.	12	July	$50	None
Bishop Clarkson Memorial Hospital	Omaha	yes	yes	11	10	yes	166	No	3	Ap.	12	June & July	$25	Req.
Creighton Memorial St. Joseph's Hospital	Omaha	203	103	43	33	52	433	No	10	Both	12	July	$30 (o)	None
Douglas County Hospital	Omaha	72	63	18	30	245	418	No	10	Both	12	July	$30	Req.
Evangelical Covenant Hospital	Omaha	30	27	26	17	25	125	No	2	Ap.	12	June	$25	Req.
Immanuel Deaconess Institute	Omaha	70	30	18	12	29	159	No	4	Ap.	12	June	$35	None
Nebraska Methodist Episcopal Hospital	Omaha	yes	yes	25	30	38	215	No	5	Ap.	12	July	$25	None
St. Catherine's Hospital	Omaha	yes	yes	24	yes	yes	173	No	4	Ap.	12	July	$25	None
University of Nebraska Hospital	Omaha	54	54	30	yes	yes	240	No	12	Ap.	12	July	$25	Req.
NEW HAMPSHIRE														
Mary Hitchcock Memorial Hospital [1]	Hanover	yes	yes	28	12	yes	143	No	4	Ap.	12	Jan. & July	No	Req.

Numerical and other references will be found on page 755.

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Name of Hospital	Location	Number of Beds						Affiliated—For What Service	Internships					Dispensary Service
		Surgical	Medical	Obstetric	Pediatric	Other	Total		Number	By Examination or Appointment	Length of Service in Months	Begin	Salary per Month	
NEW JERSEY														
Atlantic City Hospital	Atlantic City	yes	yes	yes	yes	yes	316	(60)	8	Ap.	12	July	$25	Req.
Bayonne Hospital and Dispensary	Bayonne	32	36	26	26	80	200	No	6	Ap.	15	Varies	$25	Req.
Cooper Hospital	Camden	83	32	51	39	153	359	No	8	Ap.	12	July	$10 (h)	Op.
West Jersey Homeopathic Hospital	Camden	69	46	68	55	29	267	No	8	Ap.	12	June	$25	Op.
Alexian Bros. Hosp. (male patients only)	Elizabeth	60	109	..	..	..	169	(61)	2	Ap.	12	June	$-0	Req.
Elizabeth General Hospital and Dispensary	Elizabeth	36	17	33	19	121	226	No	7	Ap.	12	July	$25	Req.
St. Elizabeth Hospital	Elizabeth	100	50	70	20	40	260	No	5	Ap.	12	July	$25	Req.
Englewood Hospital [1]	Englewood	78	31	41	32	64	246	No	8	Ap.	18	July	$25	Req.
Hackensack Hospital [1]	Hackensack	86	65	30	30	67	278	No	7	Ap.	12	July	$25	Req.
St. Mary Hospital	Hoboken	160	142	33	40	85	460	No	9	Ap.	12	July & Oct.	$25	Req.
Christ Hospital	Jersey City	60	48	30	24	44	206	No	6	Ap.	12	Jan. & July	$25	Req.
Jersey City Hospital [1]	Jersey City	250	200	200	100	400	1,200	(62)	48	Ap.	12-24	Jan. & July	$25	No
St. Francis Hospital	Jersey City	126	56	5	28	6	221	No	6	Ap.	12	July	$25	Req.
Monmouth Memorial Hospital	Long Branch	32	22	15	27	112	208	No	6	Ap.	18	July	$25	None
Mountainside Hospital	Montclair	52	36	51	38	173	340	No	10	Ap.	12	July	$25	Req.
Morristown Memorial Hospital	Morristown	16	16	39	17	91	160	No	4	Ap.	12	July to Oct.	$30	Req.
Hospital of St. Barnabas [1]	Newark	yes	yes	yes	yes	yes	158	No	3	Ap.	12	July	$30	Req.
Newark Beth Israel Hospital	Newark	80	80	yes	41	yes	413	No	8	Ap.	18	June	$100 yr.	Op.
Newark City Hospital [1]	Newark	255	125	50	100	170	700	No	21	Both	(1-b)	July	$0	None
Newark Memorial Hospital	Newark	yes	yes	25	26	50	157	No	3	Ap.	12	July	$25	Req.
St. James' Hospital [1]	Newark	52	30	15	30	18	125	No	3	Ap.	12	July	$30	Op.
St. Michael's Hospital	Newark	109	98	..	42	51	300	(62)	8	Ap.	12	July	$30	Req.
St. Peter's General Hospital	New Brunswick	yes	yes	yes	yes	yes	250	No	4	Ap.	12	July & Sept.	$30	Req.
Orange Memorial Hospital	Orange	yes	yes	75	yes	yes	388	No	7	Ap.	12	July	$25	Req.
Passaic General Hospital [1]	Passaic	116	40	30	10	29	225	(63)	3	Ap.	12	June & July	$-0	Req.
St. Mary's Hospital	Passaic	76	50	50	24	61	261	No	3	Ap.	12	July	$30	Req.
Nathan and Miriam Barnert Memorial Hosp.	Paterson	56	17	14	14	34	135	No	4	Ap.	12	July & Oct.	$15-$20	Req.
Paterson General Hospital	Paterson	yes	yes	yes	yes	yes	329	No	5	Both	12	July	$25	None
St. Joseph's Hospital	Paterson	149	92	52	22	130	445	No	6	Ap.	12	July	$25	Op.
Muhlenberg Hospital	Plainfield	90	75	55	40	35	275	No	5	Ap.	12	July	$25	Req.
Holy Name Hospital	Teaneck	yes	yes	4	33	yes	220	No	5	Ap.	12	July	$25	Req.
Mercer Hospital	Trenton	yes	yes	yes	yes	yes	250	No	6	Ap.	12	July	$30	Req.
St. Francis Hospital	Trenton	145	81	39	29	22	314	No	8	Ap.	12	July	$25	Req.
William McKinley Memorial Hospital	Trenton	36	40	32	8	40	146	No	3	Ap.	12	July	$30	Req.
North Hudson Hospital	Weehawken	yes	yes	28	yes	yes	163	No	8	Ap.	24	July	$25	Req.
NEW YORK														
Albany Hospital [1]	Albany	170	77	33	42	195	517	No	16	Ap.	12	July	No	Req.
Memorial Hospital [1]	Albany	76	34	15	yes	15	140	No	5	Ap.	12	July	$30	Req.
St. Peter's Hospital	Albany	65	60	..	16	9	150	(64)	5	Ap.	12	July	$40	Req.
Auburn City Hospital [1]	Auburn	yes	yes	44	21	yes	155	No	2	Ap.	12	July	$30	Req.
Binghamton City Hospital	Binghamton	yes	yes	38	31	yes	450	No	9	Ap.	12	July	$30	Op.
Beth El Hospital	Brooklyn	70	64	50	..	48	241	No	12	Both	18	Jan. & July	No	Req.
Beth Moses Hospital	Brooklyn	92	50	34	30	50	226	No	15	Both	24	Jan. & July	No	Req.
Brooklyn Hospital	Brooklyn	94	52	78	yes	yes	294	No	14	Both	24	July	No	Op.
Caledonian Hospital [1]	Brooklyn	yes	yes	yes	yes	yes	150	No	2	Ap.	12	June	$25	None
Coney Island Hospital [1]	Brooklyn	150	56	28	36	30	300	No	18	Both	24	July	No	Req.
Cumberland Hospital	Brooklyn	103	87	46	72	122	430	No	24	Ex.	24	July	No	Req.
Greenpoint Hospital	Brooklyn	64	64	34	40	98	300	No	12	Ex.	24	July	No	Req.
Israel Zion Hospital	Brooklyn	90	75	96	15	130	415	(65)	24	Ex.	24	July & Dec.	No	None
Jewish Hospital [1]	Brooklyn	97	77	127	63	211	670	(65)	32	Ap.	30	Jan. & July	No	Req.
Kings County Hospital	Brooklyn	323	407	131	50	659	1,660	No	56	Ap.	24	(1-k)	No	Req.
Long Island College Hospital	Brooklyn	206	61	30	36	147	480	(66)	35	Ap.	12	July	(m)	Req.
Methodist Episcopal Hospital	Brooklyn	242	54	80	24	..	400	No	12	Ap.	24	July	No	None
Norwegian Lutheran Deaconess Home and Hospital	Brooklyn	52	27	30	15	77	201	No	9	Ap.	12	July	No	Req.
St. Catherine's Hospital	Brooklyn	109	94	49	yes	44	296	No	12	Ap.	24	July	No	Op.
St. John's Hospital	Brooklyn	50	41	21	36	94	234	(67)	10	Ap.	24	July	$25	Req.
St. Mary's Hospital	Brooklyn	90	79	45	43	42	299	No	10	Ap.	24	July	No	Op.
St. Peter's Hospital	Brooklyn	147	75	..	15	13	250	(68)	6	Ap.	12	July	No	None
U. S. Naval Hospital	Brooklyn	288	230	..	..	397	1,115	(69)	12	Both	12	July	(h)	None
Wyckoff Heights Hospital	Brooklyn	80	50	22	18	30	200	No	12	Both	14	July	No	Req.
Buffalo and Emergency Hospitals of the Sisters of Charity	Buffalo	yes	yes	yes	yes	yes	335	No	6	Both	12	July	$25	Req.
Buffalo City Hospital [1]	Buffalo	188	114	24	52	685	1,063	No	12	Ap.	12	July	$30	Req.
Buffalo General Hospital	Buffalo	150	122	28	30	39	370	No	22	Both	12	July	No	Req.
Deaconess Hospital	Buffalo	yes	yes	36	27	55	225	No	6	Ap.	12	July	$25	None
Mercy Hospital	Buffalo	39	34	39	17	60	189	No	4	Ap.	12	July	$30	Req.
Millard Fillmore Hospital	Buffalo	65	171	65	yes	yes	301	No	10	Ap.	12	July	$25	Req.
Clifton Springs Sanitarium and Clinic [1]	Clifton Springs	36	400	..	yes	8	458	No	3	Ap.	12	July	$25	None
Arnot-Ogden Memorial Hospital	Elmira	32	37	32	31	86	218	No	2	Ap.	12	July	$20 (g)	Req.
St. Joseph's Hospital	Elmira	97	64	27	34	..	222	No	3	Ap.	12	July	$30	None
Ideal Hospital [1]	Endicott	40	25	39	13	30	147	No	2	Ap.	12	July	$30	None
Flushing Hospital and Dispensary	Flushing	61	25	47	16	92	243	No	8	Ap.	24	(1-b)	$30	Req.
Mary Immaculate Hospital [1]	Jamaica	yes	yes	35	yes	yes	300	No	12	Ap.	24	July	$30	Req.
Charles S. Wilson Memorial Hospital	Johnson City	55	43	27	32	43	200	No	3	Ap.	12	July	$30	Req.
St. John's Long Island City Hospital	Long Island City	128	52	38	21	41	280	No	14	Ap.	24	July	No	Req.
Nassau Hospital	Mineola	40	30	39	30	86	225	No	6	Ap.	18	Jan. & July	$30	None
Mount Vernon Hospital	Mount Vernon	63	36	24	7	40	180	No	4	Both	12	Jan. & July	$50-$75	Op.
New Rochelle Hospital	New Rochelle	yes	yes	33	13	yes	147	No	6	Ap.	12	July	$25	Req.
Bellevue Hospital [1]	New York	340	363	156	287	923	2,069	No	76	Ex.	12-24	Jan. & July	No	Req.
Beth David Hospital [1]	New York	34	16	12	14	52	128	No	6	Ex.	12	July	$25	Req.
Beth Israel Hospital [1]	New York	50	50	45	179	550	No	24	Ex.	12-24	July	No	Op.	
Columbus Hospital [1]	New York	100	40	40	25	95	300	No	8	Both	12	(1-b)	No	Req.
Fifth Avenue Hospital	New York	104	52	33	72	40	301	No	9	Ap.	12-15	(1-b)	No	Req.
Fordham Hospital	New York	106	237	102	100	22	567	No	15	Both	30	(1-d)	No	Op.
French Hospital	New York	yes	yes	..	..	..	300	No	17	Ap.	18-24	(1-d)	No	Req.
Gouverneur Hospital [1]	New York	97	50	41	32	..	210	No	14	Ex.	12-24	Jan. & July	No	Op.
Harlem Hospital [1]	New York	75	93	80	56	21	325	No	30	Both	24	Jan. & July	No	None
Hospital for Joint Diseases	New York	yes	yes	..	yes	yes	325	(70)	13	Ex.	24	Jan. & July	No	Req.
Knickerbocker Hospital	New York	47	35	31	8	93	214	No	5	Both	24	(1-b)	No	Req.
Lebanon Hospital	New York	51	45	18	30	58	192	No	11	Both	30-28	(1-m)	No	Req.
Lenox Hill Hospital	New York	81	44	10	48	182	365	No	18	Both	24	Jan. & July	(p)	None
Lincoln Hospital	New York	123	70	30	yes	30	253	No	22	Ex.	24	Jan. & July	No	Op.
Metropolitan Hospital [1]	New York	100	366	40	314	710	1,670	No	56	Ex.	12	July	No	Req.
Misericordia Hospital	New York	55	31	118	17	101	322	No	3	Ap.	12	July	$10	Req.
Montefiore Hospital for Chronic Diseases [1]	New York	41	128	..	32	500	701	No	11	Ap.	12	Jan. & July	$25	Req.
Morrisania City Hospital [1]	New York	155	155	69	80	80	539	No	32	Ex.	24	Jan.	No	Op.
Mount Sinai Hospital [1]	New York	yes	yes	..	yes	yes	700	No	31	Ex.	12-30	Jan. & July	No	None
New York City Hospital	New York	148	306	76	64	466	1,060	No	27	Ex.	18	Jan. & July	No	Op.
New York Homeopathic Medical College and Flower Hospital [1]	New York	yes	yes	yes	30	yes	231	No	11	Both	12	July	(n)	Req.
New York Hospital [1]	New York	100	80	..	28	79	286	No	22	Ap.	24	Jan. & July	No	Req.

Numerical and other references will be found on page 755.

Name of Hospital	Location	Number of Beds: Surgical	Medical	Obstetric	Pediatric	Other	Total	Affiliated—For What Service	Internships: Number	By Examination or Appointment	Length of Service in Months	Begin	Salary per Month	Dispensary Service
NEW YORK—Continued														
New York Infirmary for Women and Children [1]	New York	35	20	40	23	37	155	No	5	Ap.	12	(1-b)	$10	Req.
New York Polyclinic Medical School and Hospital	New York	95	50	32	15	145	337	No	8	Ap.	24	(1-b)	No	Req.
New York Postgraduate Medical School and Hospital	New York	102	47	..	62	204	415	No	30	Both	12-28	Varies	No	Req.
Presbyterian Hospital [1]	New York	261	130	114	yes	222	872	(71)	47	Both	25	(1-m)	No	Req.
Roosevelt Hospital	New York	137	80	..	20	154	391	No	19	Both	24	Jan. & July	No	Req.
St. Francis Hospital	New York	295	130	..	yes	..	425	No	8	Ap.	24	Jan. & July	No	None
St. Luke's Hospital [1]	New York	216	216	..	40	54	526	No	22	Both	12-24	Jan. & July	No	None
St. Vincent's Hospital	New York	179	120	..	69	50	418	No	28	Ex.	24	Jan. & July	No	Req.
Sydenham Hospital	New York	39	35	14	19	93	200	No	8	Ex.	24	July	No	None
U. S. Marine Hospital (Ellis Island)	New York	76	103	..	7	354	540	(72)	3	Both	12	July	(b)	None
United Hospital	Port Chester	yes	yes	33	30	36	200	No	5	Ap.	12	July	$20	Req.
Vassar Brothers Hospital	Poughkeepsie	75	55	34	12	28	204	No	4	Ap.	12	July	$30 (n)	Req.
Jamaica Hospital	Richmond Hill	yes	yes	yes	yes	yes	167	No	7	Ap.	18	(1-o)	$30	Req.
Genesee Hospital	Rochester	78	31	30	25	51	215	No	6	Ap.	12	July	$25	Req.
Highland Hospital	Rochester	yes	yes	yes	yes	yes	258	No	5	Ap.	12	July	$25	Req.
Rochester General Hospital	Rochester	64	37	50	50	88	319	No	14	Ap.	12	July	$25	Req.
St. Mary's Hospital	Rochester	yes	yes	25	33	yes	211	No	5	Ap.	12	July	No	Req.
Strong Memorial Hospital [1]	Rochester	64	64	15	47	106	296	(75)	28	Ap.	12	July	No	Req.
Ellis Hospital [1]	Schenectady	132	45	39	30	39	285	(74)	7	Ap.	12	July	$25	Req.
St. Vincent's Hospital	Staten Island	10	52	35	23	36	156	No	6	Both	18	(1-b)	No	Req.
Staten Island Hospital	Staten Island	88	68	55	20	44	275	No	6	Ap.	18	(1-b)	No	Req.
U. S. Marine Hospital	Staten Island	123	105	..	..	84	312	(75)	9	Both	12	July	(b)	None
General Hospital of Syracuse	Syracuse	50	28	27	..	25	130	No	3	Ap.	12	July	$25-$30	Req.
Hospital of the Good Shepherd, Syracuse University	Syracuse	yes	yes	28	39	yes	289	(76)	8	Both	12	July & Aug.	No	None
St. Joseph Hospital	Syracuse	107	41	29	23	31	231	No	4	Ap.	12	July	$25	None
Syracuse Memorial Hospital	Syracuse	yes	yes	45	45	yes	250	No	8	Ap.	12	July	No	None
Samaritan Hospital [1]	Troy	47	29	15	19	71	181	No	3	Ap.	12	July	$20	Req.
Troy Hospital	Troy	124	92	4	30	12	262	(64)	4	Ap.	12	July	$20	Op.
Grasslands Hospital [1]	Valhalla	144	149	14	34	562	903	No	15	Ap.	18	Jan. & July	$35	Req.
St. John's Riverside Hospital	Yonkers	50	29	24	25	77	205	No	5	Ap.	15	July	$20	Op.
St. Joseph's Hospital	Yonkers	46	25	14	10	25	120	No	4	Ap.	12	July	$25 (g)	Req.
NORTH CAROLINA														
Duke Hospital [1]	Durham	146	152	56	52	50	456	No	16	Ap.	12	July	No	Req.
Lincoln Hospital [1] (col.)	Durham	41	36	18	12	1	108	No	3	Ap.	12	(1-p)	$5	Req.
Watts Hospital [1]	Durham	94	40	24	28	24	210	No	3	Ap.	12	July	$15 (h)	Req.
Highsmith Hospital	Fayetteville	39	28	4	10	25	106	No	1	Ap.	12	July	$30	Req.
L. Richardson Memorial Hospital [1] (col.)	Greensboro	34	12	6	12	..	64	No	2	Ap.	12	June & Oct.	$10	Req.
Rex Hospital	Raleigh	yes	yes	16	20	..	125	No	2	Ap.	12	July	$25 (g)	Req.
St. Agnes' Hospital (col.)	Raleigh	54	16	10	10	10	100	No	3	Ap.	12	(1-q)	No	Req.
Park View Hospital [1]	Rocky Mount	yes	yes	yes	yes	yes	100	No	2	Ap.	12	July	$25	None
Davis Hospital	Statesville	yes	yes	yes	yes	yes	132	No	2	Ap.	12	July	...	Op.
James Walker Memorial Hospital	Wilmington	yes	yes	30	21	24	150	No	4	Ap.	12	July	$25 (g)	Req.
City Memorial Hospital	Winston-Salem	75	65	30	15	23	208	(77)	5	Ap.	12	July	$25	Req.
NORTH DAKOTA														
Bismarck Hospital	Bismarck	yes	yes	yes	yes	yes	140	No	2	Ap.	12	July	$30	None
St. John's Hospital	Fargo	88	32	33	15	30	198	No	2	Ap.	12	July	$30	None
OHIO														
City Hospital	Akron	219	55	38	..	38	350	(78)	12	Ap.	12	July	$25	Req.
St. Thomas Hospital	Akron	62	25	39	15	42	183	No	3	Ap.	12	July	$25	None
Mercy Hospital	Canton	75	49	55	21	41	225	No	2	Ap.	12	July	$25	None
Bethesda Hospital [1]	Cincinnati	121	40	55	25	55	296	No	5	Ap.	12	July	$25 (j)	Req.
Christ Hospital	Cincinnati	102	94	49	..	121	366	(79)	8	Both	12	July	$25	Req.
Cincinnati General Hospital [1]	Cincinnati	165	165	50	125	420	925	(80)	30	Ap.	12	July	No	Req.
Deaconess Hospital [1]	Cincinnati	81	38	25	yes	31	175	No	4	Ap.	12	July	$25 (h)	Req.
Good Samaritan Hospital [1]	Cincinnati	163	83	66	46	178	536	No	12	Ap.	12	July	$25	Req.
Jewish Hospital	Cincinnati	yes	yes	37	37	49	272	No	7	Ap.	12	July	$25	None
St. Mary Hospital	Cincinnati	111	59	..	30	..	200	(81)	5	Ap.	12	July	$20	Req.
Charity Hospital	Cleveland	204	..	..	55	14	301	(82)	12	Ap.	12	July	$20	Req.
City Hospital [1]	Cleveland	160	160	52	65	1,023	1,460	No	32	Ap.	12	July	No	Req.
Mount Sinai Hospital [1]	Cleveland	44	22	45	22	137	270	(83)	10	Ap.	12	July	$10	Req.
St. Alexis Hospital	Cleveland	106	53	..	yes	50	230	(82)	8	Ap.	12	July	$25	Req.
St. John's Hospital	Cleveland	60	34	28	22	70	214	No	6	Ap.	12	July	$20 (o)	Req.
St. Luke's Hospital	Cleveland	128	88	62	40	82	400	No	17	Ap.	12	July	No	Req.
University Hospitals of Cleveland [1]	Cleveland	120	100	118	135	370	843	(84)	39	Both	12-16	Varies	No	Req.
Woman's Hospital [1]	Cleveland	74	18	31	12	35	170	No	3	Ap.	12	July	$20	None
Grant Hospital	Columbus	120	75	45	30	63	333	No	9	Ap.	12	July	$25 (g)	Req.
Mount Carmel Hospital	Columbus	136	28	24	6	49	243	(85)	4	Ap.	12	July	$25 (g)	Op.
St. Francis Hospital	Columbus	yes	yes	..	..	yes	150	(86)	6	Ap.	12	July	$16.66	None
Starling-Loving University Hospital	Columbus	115	60	35	32	41	276	No	9	Ap.	12	July	$16.75	Req.
White Cross Hospital [1]	Columbus	111	105	30	28	..	274	No	8	Ap.	12	July	$25	Req.
Miami Valley Hospital	Dayton	yes	yes	46	yes	105	296	No	12	Ap.	12	July	$25	Req.
St. Elizabeth Hospital	Dayton	yes	yes	35	yes	yes	420	No	8	Ap.	12	July	$25	Req.
Elyria Memorial Hospital	Elyria	36	29	..	69	..	134	No	4	Ap.	12	July	$20	None
Mercy Hospital [1]	Hamilton	65	60	45	25	25	220	No	2	Ap.	12	July	$25 (q)	Req.
St. Rita's Hospital	Lima	52	30	16	12	16	116	(87)	2	Ap.	12	July	$25	Op.
Springfield City Hospital	Springfield	41	25	25	19	25	135	No	5	Ap.	12	July	$20	Req.
Flower Hospital	Toledo	yes	yes	31	yes	yes	150	No	3	Ap.	12	July	$25	None
Lucas County General Hospital	Toledo	80	84	34	50	67	315	No	8	Ap.	12	July	$25	Req.
Mercy Hospital	Toledo	46	35	30	yes	24	135	No	3	Ap.	12	July	$25	Req.
St. Vincent's Hospital	Toledo	88	123	45	53	78	387	No	9	Ap.	12	July	$25 (q)	Req.
Toledo Hospital	Toledo	yes	yes	25	22	yes	275	No	5	Ap.	12	July	$25	Req.
St. Elizabeth's Hospital	Youngstown	yes	yes	yes	yes	yes	300	No	6	Ap.	12	July	$20 (j)	Req.
Youngstown Hospital	Youngstown	200	85	75	40	50	450	(88)	12	Ap.	12	July	$30	Req.
OKLAHOMA														
St. Anthony Hospital	Oklahoma City	yes	yes	yes	yes	yes	250	No	8	Ap.	12	July	$25	None
State University Hospitals [1]	Oklahoma City	50	50	17	50	279	446	No	12	Ap.	12	July	$10 (h)	Req.
Wesley Hospital	Oklahoma City	yes	yes	31	yes	yes	150	No	4	Ap.	12	July	$20	None
Morningside Hospital	Tulsa	yes	yes	28	20	37	250	No	4	Ap.	12	July	$25 (h)	Req.
St. John's Hospital	Tulsa	yes	yes	25	25	yes	273	No	4	Ap.	12	July	$25 (q)	Req.
OREGON														
Emanuel Hospital	Portland	108	43	66	yes	66	283	(89)	6	Ap.	12	July	$20	Req.
Good Samaritan Hospital [1]	Portland	yes	yes	24	21	yes	230	No	8	Ap.	12	July	$20	None
Multnomah Hospital [1]	Portland	yes	yes	yes	yes	yes	320	(90)	14	Ap.	12	July	$20	Req.
Portland Sanitarium	Portland	yes	yes	22	18	24	144	No	3	Ap.	12	July	$25 (c)	None
St. Vincent's Hospital	Portland	218	100	36	12	36	402	(91)	10	Ap.	12	July	$20	None
PENNSYLVANIA														
Abington Memorial Hospital	Abington	102	58	66	99	12	367	No	7	Ap.	12	July	No	Req.
Allentown Hospital [1]	Allentown	173	58	27	42	25	325	No	8	Ap.	12	July	No	Req.

Numerical and other references will be found on page 755.

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Name of Hospital	Location	Number of Beds						Affiliated—For What Service	Internships					Dispensary Service
		Surgical	Medical	Obstetric	Pediatric	Other	Total		Number	By Examination or Appointment	Length of Service in Months	Begin	Salary per Month	
PENNSYLVANIA—Continued														
Sacred Heart Hospital	Allentown	yes	yes	yes	yes	yes	300	(92)	7	Ap.	12	July	No	Req.
Altoona Hospital	Altoona	68	41	19	11	41	180	No	5	Ap.	12	July	$25	Req.
Mercy Hospital	Altoona	yes	yes	30	12	yes	134	No	4	Ap.	12	July	$25	Req.
St. Luke's Hospital	Bethlehem	91	40	20	24	30	205	No	7	Ap.	12	July	$20 (r)	Req.
Bryn Mawr Hospital	Bryn Mawr	36	36	24	25	149	270	No	8	Ap.	12	July	No	Req.
Chester Hospital [1]	Chester	114	58	37	29	47	285	No	7	Ap.	12	July	$20	Op.
G. F. Geisinger Memorial Hospital	Danville	yes	yes	yes	yes	yes	195	No	8	Ap.	12	July	No	Req.
Easton Hospital	Easton	82	28	23	30	57	220	No	4	Ap.	12	July	$25	Req.
Hamot Hospital	Erie	43	36	27	20	94	210	No	7	Ap.	12	July	$20	None
St. Vincent's Hospital	Erie	yes	yes	24	36	yes	240	No	8	Ap.	12	July	$25	Op.
Harrisburg Hospital [1]	Harrisburg	yes	yes	25	16	50	284	No	8	Ap.	12	July	$25	Req.
Harrisburg Polyclinic Hospital	Harrisburg	yes	yes	yes	yes	yes	182	No	4	Ap.	12	July	$20	Req.
Conemaugh Valley Memorial Hospital	Johnstown	yes	yes	yes	yes	yes	250	No	6	Ap.	12	July	No	Req.
Lancaster General Hospital [1]	Lancaster	108	45	55	36	29	273	No	6	Ap.	12	July	$25	Req.
McKeesport Hospital	McKeesport	56	41	40	21	105	263	No	6	Ap.	12	July	$25	Req.
Jameson Memorial Hospital [1]	New Castle	yes	yes	32	yes	21	151	No	3	Ap.	12	July	No	Req.
Montgomery Hospital	Norristown	40	30	12	10	43	125	No	3	Ap.	12	July	$20	Req.
Chestnut Hill Hospital	Philadelphia	23	23	33	12	23	114	No	4	Ap.	12	July	$20	Req.
Frankford Hospital	Philadelphia	57	24	23	15	23	142	No	6	Ap.	12	July	$25	Req.
Frederick Douglass Memorial Hosp. [1] (col.)	Philadelphia	18	9	9	13	9	58	No	2	Ap.	12	June	No	Req.
Germantown Dispensary and Hospital	Philadelphia	yes	yes	50	38	60	360	No	12	Ap.	24	July	No	Req.
Graduate Hospital of the University of Pennsylvania	Philadelphia	yes	yes	yes	yes	yes	402	No	16	Both	24	July	No	Req.
Hahnemann Medical College Hospital	Philadelphia	yes	yes	yes	yes	yes	592	No	18	Ap.	12	July	No	Req.
Hospital of the Protestant Episcopal Church	Philadelphia	102	198	..	50	10	470	(93)	16	Ap.	24	Jan. & July	No	Req.
Hospital of the University of Pennsylvania [1]	Philadelphia	134	92	61	69	237	593	No	28	Both	24	July	No	Req.
Hospital of the Woman's Medical College [2]	Philadelphia	yes	yes	37	35	yes	171	No	6	Ap.	12	July & Sept.	No	Req.
Jefferson Medical College Hospital	Philadelphia	71	76	34	48	479	688	No	28	Both	24	June	No	Req.
Jewish Hospital [1]	Philadelphia	76	50	56	23	212	417	(94)	18	Both	24	June	No	Req.
Lankenau Hospital	Philadelphia	146	72	50	..	55	298	No	8	Ap.	24	(1-h)	No	Req.
Memorial Hospital [1]	Philadelphia	52	37	12	12	12	125	No	4	Ap.	12	July	$20	Req.
Mercy Hospital [1] (col.)	Philadelphia	25	25	21	17	19	107	No	5	Ap.	12	July	$10	Req.
Methodist Episcopal Hospital	Philadelphia	yes	yes	yes	yes	yes	301	No	8	Ap.	12	July	No	Req.
Misericordia Hospital [1]	Philadelphia	65	56	36	60	74	291	No	9	Ap.	12	July	No	Req.
Mount Sinai Hospital [1]	Philadelphia	yes	yes	yes	yes	yes	316	No	14	Both	12	June	No	Op.
Northeastern Hospital	Philadelphia	17	15	30	24	16	102	No	3	Ap.	12	June	$40	Req.
Pennsylvania Hospital	Philadelphia	92	113	130	yes	365	500	(95)	18	Ap.	24	Varies	No	Req.
Philadelphia General Hospital [1]	Philadelphia	328	400	60	300	1,467	2,345	(94)	60	Ex.	24	July	Ex.	Req.
Presbyterian Hospital	Philadelphia	yes	yes	41	24	57	324	No	11	Both	24	July	No	Req.
St. Agnes Hospital	Philadelphia	114	90	46	28	68	346	No	10	Ap.	12	July	No	Req.
St. Joseph's Hospital	Philadelphia	71	55	45	25	74	270	(96)	8	Ap.	12	July	No	Req.
St. Luke's and Children's Homeopathic Hospitals	Philadelphia	yes	yes	yes	yes	yes	300	No	6	Ap.	12	July	No	Req.
St. Mary's Hospital	Philadelphia	107	58	40	25	..	230	No	7	Ap.	12	July	No	Req.
Temple University Hospital [1]	Philadelphia	yes	yes	32	31	yes	356	(97)	14	Ap.	24	June	No	Req.
U. S. Naval Hospital	Philadelphia	170	200	..	..	251	760	(98)	10	Both	12	July	(b)	None
Woman's Hospital [2]	Philadelphia	41	27	40	22	40	170	No	6	Ap.	12	July	No	None
Women's Homeopathic Hospital	Philadelphia	50	50	60	..	40	200	No	4	Ex.	12	July	$30	Req.
Allegheny General Hospital [1]	Pittsburgh	90	50	44	58	163	405	No	12	Ap.	12	July	No	Req.
Homeopathic Medical and Surgical Hospital and Dispensary [2]	Pittsburgh	yes	yes	yes	yes	yes	310	No	8	Ap.	12	July	No	Req.
Mercy Hospital [1]	Pittsburgh	yes	yes	yes	yes	yes	670	(99)	22	Ap.	12	July	No	Req.
Montefiore Hospital [1]	Pittsburgh	yes	yes	yes	yes	yes	225	No	7	Ap.	12	July	$30	Req.
Passavant Hospital [1]	Pittsburgh	yes	yes	yes	yes	yes	150	(100)	6	Ap.	12	July	$10 (h)	Req.
Pittsburgh Hospital	Pittsburgh	yes	yes	28	15	yes	300	No	5	Ap.	12	July	$25	Req.
Presbyterian Hospital [1]	Pittsburgh	yes	yes	yes	yes	yes	197	(101)	15	Both	12	July	No	Req.
St. Francis Hospital	Pittsburgh	160	107	36	32	205	540	(93)	16	Ap.	12	July	No	Req.
St. John's General Hospital	Pittsburgh	77	50	18	57	..	202	No	6	Ap.	12	July	$25	Req.
St. Joseph's Hospital	Pittsburgh	42	34	8	18	38	140	No	5	Ap.	12	July	No	Req.
St. Margaret Memorial Hospital [1]	Pittsburgh	45	45	42	30	21	173	No	4	Ap.	12	July	$25	Req.
South Side Hospital	Pittsburgh	50	55	10	25	103	225	No	7	Ap.	12	July	No	Req.
Western Pennsylvania Hospital [1]	Pittsburgh	203	176	59	106	107	651	No	30	Ap.	12	July	No	Req.
Pottsville Hospital [1]	Pottsville	36	28	18	10	48	140	No	4	Ap.	12	July	$25	Req.
Reading Hospital	Reading	97	56	41	36	38	268	No	7	Ap.	12	July	No	Req.
St. Joseph's Hospital	Reading	73	54	25	18	35	205	No	6	Ap.	12	July	$25	Req.
Robert Packer Hospital	Sayre	134	95	17	14	..	260	No	8	Ap.	12	Jan. & July	No	Req.
Hahnemann Hospital	Scranton	24	24	11	12	54	125	No	4	Ap.	12	July	$15	Req.
Moses Taylor Hospital	Scranton	42	36	..	..	22	100	(102)	3	Ap.	12	July	$30	Req.
Scranton State Hospital	Scranton	60	40	6	26	56	188	No	6	Ap.	12	July	$6.33	Req.
Uniontown Hospital	Uniontown	117	66	15	27	..	225	No	6	Ap.	12	July	$25	Req.
Washington Hospital	Washington	yes	yes	yes	yes	yes	166	No	5	Ap.	12	July	$50	Req.
Chester County Hospital	West Chester	42	42	22	18	31	155	No	4	Ap.	12	July	$47.50	Req.
Mercy Hospital [1]	Wilkes-Barre	46	30	30	24	70	200	No	5	Ap.	12	July	$50	Req.
Wilkes-Barre General Hospital	Wilkes-Barre	104	126	57	35	90	472	No	10	Ap.	12	July	No	Req.
Columbia Hospital [1]	Wilkinsburg	65	55	52	28	4	204	No	5	Ap.	12	July	$30	Req.
Williamsport Hospital [1]	Williamsport	90	69	44	19	44	275	No	5	Ap.	12	July	$50	Req.
Windber Hospital	Windber	49	28	10	15	..	102	No	3	Ap.	12	July	$50	Req.
York Hospital	York	57	56	32	24	25	194	No	6	Ap.	12	July	$35	Req.
RHODE ISLAND														
Memorial Hospital	Pawtucket	45	30	36	45	32	188	No	6	Ap.	12	(1-r)	$200 yr.	Req.
Homeopathic Hospital	Providence	yes	yes	yes	yes	yes	300	No	4	Ap.	12	July	$20	Req.
Rhode Island Hospital	Providence	300	125	..	60	115	600	(103)	18	Ap.	24	(1-b)	No	None
St. Joseph's Hospital	Providence	60	28	35	50	136	318	No	6	Ap.	12	July	No	None
SOUTH CAROLINA														
Roper Hospital	Charleston	85	74	30	18	93	300	No	16	Ap.	12	July	$10	Req.
Columbia Hospital	Columbia	yes	yes	yes	yes	yes	152	No	3	Ap.	12	July	$20 (h)	Req.
Greenville City Hospital	Greenville	yes	yes	13	10	..	125	No	3	Ap.	12	July	$30	None
Spartanburg General Hospital [1]	Spartanburg	yes	yes	yes	yes	yes	286	No	5	Ap.	12	July	$15 (j)	Req.
TENNESSEE														
Baroness Erlanger Hospital	Chattanooga	68	32	20	..	126	246	(104)	5	Ap.	12	July	$50	Req.
Knoxville General Hospital	Knoxville	yes	yes	yes	yes	yes	281	No	10	Ap.	12	(1-e)	$25 (j)	Req.
Baptist Memorial Hospital	Memphis	yes	yes	yes	yes	yes	430	No	12	Ap.	18	Varies	$25 (h)	None
Memphis General Hospital	Memphis	yes	yes	yes	yes	yes	400	No	18	Ap.	18	Monthly	$25	Req.
Methodist Hospital	Memphis	yes	yes	yes	yes	yes	185	No	2	Ap.	12	July	$50	None
St. Joseph's Hospital	Memphis	yes	yes	40	30	36	300	No	5	Ap.	12	(1-s)	$40 (j)	None
George W. Hubbard Hospital (col.)	Nashville	38	38	19	29	40	164	No	6	Ap.	12	July	$15	Req.
Nashville General Hospital	Nashville	31	36	12	39	60	168	No	8	Ap.	12	July	$25	Req.
St. Thomas Hospital	Nashville	yes	yes	yes	yes	yes	225	No	8	Ap.	12	July	$40	None
Vanderbilt University Hospital	Nashville	75	65	22	30	25	215	(105)	10	Ap.	12	July	$25	None

Numerical and other references will be found on page 755.

Name of Hospital	Location	Number of Beds						Affiliated—For What Service	Internships					
		Surgical	Medical	Obstetric	Pediatric	Other	Total		Number	By Examination or Appointment	Length of Service in Months	Begin	Salary per Month	Dispensary Service
TEXAS														
Hotel Dieu Hospital	Beaumont	30	45	14	10	70	189	No	2	Ap.	12	July	$30	None
Baylor Hospital [1]	Dallas	190	40	50	36	59	375	No	11	Ap.	12	July	$25	Req.
Parkland Hospital	Dallas	yes	yes	35	10	yes	280	(106)	13	Ap.	12	July	$25	Req.
St. Paul's Hospital	Dallas	130	60	60	20	40	310	No	8	Ap.	12	July	$25	Req.
William Beaumont General Hospital	El Paso	100	240	yes	..	..	512	No	5	Both	12	July	(b)	Req.
City and County Hospital [1]	Fort Worth	yes	yes	15	yes	yes	134	No	3	Ap.	12	July	$50	Req.
Harris Clinic Hospital	Fort Worth	yes	yes	yes	yes	yes	106	No	2	Ap.	12	July	No	Req.
St. Joseph's Hospital	Fort Worth	93	53	20	14	16	195	No	2	Ap.	12	July	$40	None
John Sealy Hospital [1]	Galveston	90	64	20	30	170	374	No	8	Ap.	12	June & July	No	Req.
St. Mary's Infirmary	Galveston	35	40	15	12	63	165	No	3	Ap.	12	June	$25	None
U. S. Marine Hospital	Galveston	35	35	..	yes	30	100	(107)	2	Ap.	12	July	(b)	Req.
Hermann Hospital	Houston	40	40	9	15	92	196	No	5	Ap.	12	July	$25	Req.
Jefferson Davis Hospital	Houston	yes	yes	22	21	yes	185	No	10	Ap.	12	July	$45	Req.
Medical and Surgical Hospital	San Antonio	yes	yes	yes	yes	yes	125	No	2	Ap.	12	July	..	Req.
Robert B. Green Memorial Hospital	San Antonio	yes	yes	27	42	42	237	No	11	Ap.	12	July	$25	Req.
Santa Rosa Hospital	San Antonio	212	100	30	44	..	386	No	6	Ap.	12	July	$40	Req.
Station Hospital, Fort Sam Houston	San Antonio	284	250	16	..	100	650	No	10	Ap.	12	July	(b)	None
Gulf, Colorado and Santa Fe Hospital	Temple	yes	yes	..	..	..	150	(108)	2	Ap.	12	July	$50	None
King's Daughters Clinic and Hospital	Temple	yes	yes	yes	yes	yes	115	No	2	Ap.	12	July	$ 0	Req.
Scott and White Hospital	Temple	yes	yes	yes	yes	yes	150	(108)	4	Ap.	12	July	$ 0	None
Providence Sanitarium	Waco	78	44	16	12	..	150	No	2	Ap.	12	July	$25	Req.
UTAH														
Thomas D. Dee Memorial Hospital	Ogden	71	39	30	15	30	185	No	3	Ap.	12	Feb. & July	$25	Req.
Dr. W. H. Groves' Latter-Day Saints Hosp.	Salt Lake City	216	100	60	30	32	478	No	8	Ap.	12	July	$25 (h)	None
Holy Cross Hospital	Salt Lake City	94	58	43	20	55	270	No	3	Ap.	12	July	$35 (k)	None
St. Mark's Hospital	Salt Lake City	yes	yes	13	yes	yes	170	No	2	Ap.	12	July	$35	None
Salt Lake General Hospital	Salt Lake City	40	56	17	10	86	209	No	6	Ap.	12	July	$30 (s)	Req.
VERMONT														
Mary Fletcher Hospital	Burlington	yes	yes	15	22	yes	150	No	5	Ap.	12	July & Sept.	$30	Req.
VIRGINIA														
Hospital of St. Vincent de Paul	Norfolk	yes	yes	22	32	22	270	No	5	Ap.	12	July	$25	Req.
Norfolk Protestant Hospital	Norfolk	yes	yes	22	15	yes	200	No	4	Ap.	12	July	$40	Op.
U. S. Marine Hospital	Norfolk	80	94	..	..	69	242	(109)	8	Both	12	July	(b)	None
Norfolk Naval Hospital	Portsmouth	425	497	..	..	10	937	(110)	6	Both	12	July	(b)	None
Johnston-Willis Hospital	Richmond	yes	yes	yes	yes	yes	137	No	4	Ap.	12	July	$50	Req.
Medical College of Virginia, Hospital Division [1] (Memorial, Dooley, St. Philip and Crippled Children's Hospitals)	Richmond	yes	yes	yes	yes	yes	456	(111)	20	Both	12	July	$10	Req.
Stuart Circle Hospital	Richmond	yes	yes	18	yes	yes	108	No	3	Ap.	12	July	$ 0	None
Jefferson Hospital	Roanoke	yes	yes	yes	yes	yes	119	No	3	Ap.	12	July	$ 0	Req.
University of Virginia Hospital [1]	University	yes	yes	yes	yes	yes	340	(112)	12	Ap.	12	July	No	Req.
WASHINGTON														
U. S. Naval Hospital	Bremerton	102	104	..	..	211	417	(113)	5	Both	12	July	(b)	None
Columbus Hospital	Seattle	101	62	37	yes	36	236	No	3	Ap.	12	July	$ 0	None
Harborview Hospital	Seattle	25	195	24	32	167	453	(114)	16	Ap.	18	Jan. & July	$30	Req.
Providence Hospital	Seattle	150	96	72	12	57	417	No	5	Ap.	12	July	$40	Req.
Seattle General Hospital	Seattle	yes	yes	yes	yes	yes	135	(115)	4	Ap.	12	July	$30	Req.
Swedish Hospital	Seattle	yes	yes	48	4	yes	200	(116)	8	Ap.	12	July & Oct.	$ 0	Op.
Virginia Mason Hospital	Seattle	60	60	12	6	41	180	No	4	Ap.	12	(1-q)	$20	Req.
Deaconess Hospital [1]	Spokane	yes	yes	yes	yes	yes	225	(117)	2	Ap.	12	July	$40	Req.
St. Luke's Hospital	Spokane	59	36	24	17	39	175	(118)	3	Ap.	12	July	$30	None
Northern Pacific Beneficial Association Hosp.	Tacoma	yes	yes	yes	yes	yes	120	(119)	2	Ap.	12	July	$25	Req.
Pierce County Hospital	Tacoma	42	119	17	10	28	216	No	5	Ap.	12	July	$ 0	Req.
St. Joseph's Hospital	Tacoma	100	72	30	15	113	330	No	2	Ap.	12	July	$30 (s)	Req.
Tacoma General Hospital	Tacoma	91	33	35	14	36	209	No	4	Ap.	12	July	$ 0	None
WEST VIRGINIA														
Charleston General Hospital	Charleston	yes	yes	yes	yes	yes	165	(120)	5	Ap.	12	July	$25	Req.
Chesapeake and Ohio Railway Hospital	Huntington	yes	yes	yes	yes	yes	134	(121)	3	Ap.	12	July	$ 0	Req.
Ohio Valley General Hospital	Wheeling	yes	yes	30	35	39	275	No	6	Ap.	12	July	$40	Req.
Wheeling Hospital	Wheeling	185	50	25	40	25	325	No	5	Ap.	12	July	$ 0	Req.
WISCONSIN														
St. Elizabeth Hospital	Appleton	yes	yes	yes	yes	yes	250	No	2	Ap.	12	July	$20	None
St. Joseph's Hospital	Ashland	60	45	25	18	4	150	No	1	Ap.	12	July	$30 (q)	None
Luther Hospital	Eau Claire	55	45	30	10	45	175	No	2	Ap.	12	July	$25 (h)	None
St. Agnes Hospital	Fond du Lac	88	57	34	33	38	250	No	3	Ap.	12	July	$25	None
Mercy Hospital	Janesville	75	30	30	15	..	150	No	1	Ap.	12	July	$25	None
La Crosse Lutheran Hospital	La Crosse	yes	yes	yes	yes	yes	140	No	2	Ap.	12	July	No	Req.
St. Francis Hospital	La Crosse	68	68	30	35	116	315	No	4	Ap.	12	July	$25	Op.
Madison General Hospital	Madison	98	56	20	10	21	185	No	4	Ap.	12	July	$50	None
Methodist Hospital	Madison	yes	yes	yes	yes	yes	125	No	4	Ap.	12	July	$ 0	Req.
St. Mary's Hospital	Madison	yes	yes	yes	yes	yes	175	No	4	Ap.	12	July	$360 yr.	Req.
State of Wisconsin General Hospital [1]	Madison	250	250	20	30	..	580	No	14	Ap.	12	July	No	Req.
St. Joseph's Hospital	Marshfield	54	56	15	20	25	170	No	3	Ap.	12	July	$45	None
Columbia Hospital	Milwaukee	yes	yes	yes	..	yes	185	(122)	5	Ap.	24	July	$25	Req.
Evangelical Deaconess Hospital [1]	Milwaukee	yes	yes	yes	..	yes	180	(123)	4	Ap.	12	July	$25 (h)	None
Milwaukee General Hospital [1]	Milwaukee	40	70	30	18	53	200	No	3	Ap.	12	July	$25	Req.
Milwaukee Hospital "The Passavant"	Milwaukee	yes	yes	33	19	36	251	No	6	Ap.	12	July	$25	Req.
Misericordia Hospital	Milwaukee	yes	yes	40	yes	yes	150	No	3	Ap.	12	June	$25	None
Mount Sinai Hospital	Milwaukee	yes	yes	51	yes	yes	170	No	5	Ap.	12	July	$25	Req.
St. Joseph's Hospital [1]	Milwaukee	73	56	66	40	178	395	No	6	Ap.	12	July	$25	Req.
St. Luke's Hospital	Milwaukee	yes	yes	24	6	..	119	No	2	Ap.	12	July	$25	None
St. Mary's Hospital	Milwaukee	136	40	32	18	40	266	No	5	Ap.	12	June & July	$25	None
Milwaukee County General Hospital [1]	Wauwatosa	yes	yes	yes	yes	yes	1,000	No	38	Ex.	12	Jan. & July	$25	Req.
CANAL ZONE														
Gorgas Hospital	Ancon	300	400	25	80	85	890	(124)	9	Ap.	12	June & July	$80	Req.
HAWAII														
Queen's Hospital	Honolulu	yes	yes	14	22	yes	360	(125)	7	Ap.	12	(1-b)	$50-$100	Req.
PHILIPPINE ISLANDS														
Philippine General Hospital [1]	Manila	170	142	48	54	234	648	(126)	31	Ap. (1-t)	12	March	No	Req.
FOREIGN														
Peiping Union Medical College Hospital [1]	Peiping, China	80	100	44	30	93	346	No	31	Ap.	12	July	$250 yr.	Req.
Shanghai Sanitarium and Hospital [1]	Shanghai, China	yes	yes	yes	yes	yes	220	No	6	Ap.	12	July	..	Req.

Numerical and other references will be found on page 755.

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NOTES

Information regarding acceptable internships in Canadian Hospitals may be obtained from the Canadian Medical Association, 184 College Street, Toronto, G. Harvey Agnew, M.D., Secretary, Department of Hospital Service.

1. Women interns admitted.
2. Women interns only.
(a) $50 per month; bonus of $60. No maintenance.
(b) Salary established by Government Pay Tables according to rank and service.
(c) In lieu of maintenance.
(d) Bonus of $110.
(e) Bonus of $10 for satisfactory records.
(f) Bonus of $150.
(g) Bonus of $300.
(h) Bonus of $100.
(i) $10 a month for first 6 months; $20 a month for next 6 months; $30 a month for last 6 months; bonus of $50.
(j) Bonus of $120.
(k) Bonus of $180.
(m) Bonus of $50.
(n) Bonus of $125.
(o) Bonus of $60.
(p) Bonus of $40.
(q) Bonus of $200.
(r) Bonus of $160.
(s) Bonus of $240.
(1-a) January, April, July, August and November.
(1-b) Quarterly.
(1-c) January, March, July, September and November.
(1-d) March, July and November.
(1-e) January, July and October.
(1-f) April, July and October.
(1-g) July, August and September.
(1-h) January, May and September.
(1-i) Every two months.
(1-j) Every six weeks.
(1-k) January, March, May, July, September and November.
(1-m) February, June and October.
(1-n) January, June and September.
(1-o) June, October and December.
(1-p) June, July and August.
(1-q) July, September and October.
(1-r) April, June and August.
(1-s) May, July and October.
(1-t) All internships reserved for the fifth year students of the College of Medicine, University of the Philippines.
1-u) January, April and July.

Affiliation as Referred to in Column Headed: "Affiliated—For What Service."

3. Patton State Hospital, Patton, psychiatry.
4. Los Angeles Receiving Hospital, emergency service.
5. All Nations Clinic, Los Angeles, outpatient and general service.
6. Children's Hospital, Los Angeles, pediatrics.
7. Glendale Sanitarium and Hospital, Glendale, medicine and surgery.
8. Mt. Zion Hospital and St. Francis Hospital, San Francisco, obstetrics and gynecology.
9. Internship in these hospitals includes service in Highland Hospital, Oakland, and Fairmont Hospital, San Leandro.
10. Woman's Hospital, Pasadena, obstetrics.
11. Mercy Hospital, San Diego, obstetrics.
12. Lane State Hospital, Imola; University of California and Stanford University Hospitals; Emergency Hospital and Laguna Honda Home Infirmary, San Francisco.
13. St. Francis Hospital and University of California Hospital, San Francisco, obstetrics and pediatrics.
14. San Francisco Hospital, gynecology and obstetrics.
15. Santa Barbara General Hospital, general, tuberculosis, neuropsychiatry and contagious diseases.
16. Santa Barbara Cottage Hospital, tuberculosis, neuropsychiatry and contagious diseases.
17. St. Joseph's Hospital and Children's Hospital, Denver, pediatrics and obstetrics.
18. Children's Hospital, Denver, pediatrics.
19. City Dispensary, Bridgeport, ambulance service.
20. Hartford Isolation Hospital.
21. Children's Hospital and Columbia Hospital for Women and Lying-In Asylum, Washington, pediatrics and obstetrics.
22. Columbia Hospital for Women and Lying-In Asylum, Washington, obstetrics.
23. Children's Hospital, Washington, pediatrics.
24. Misericordia Hospital and Infant's Home, Chicago, obstetrics.
25. Grant Hospital, Chicago, obstetrics and gynecology.
26. Internship in the University of Chicago Clinics includes service in: Albert Merritt Billings Hospital, Bobs Roberts Memorial Hospital, Nancy Goele McElwee Memorial and Gertrude Dunn Hixon Memorial Hospital and Max Epstein Clinic; also Chicago Lying-in Hospital.
27. Chicago Lying-In Hospital and Children's Memorial Hospital, obstetrics and pediatrics.
28. The Indiana University Hospitals include the Robert W. Long Hospital, the James Whitcomb Riley Hospital for Children, and the William H. Coleman Hospital for Women.
29. Broadlawns, Polk County Public Hospitals, Des Moines, tuberculosis and contagious diseases.
30. Watkins Memorial Hospital, Lawrence.
31. Winfield Sanatorium, Winfield, tuberculosis.
32. Salvation Army Home and Hospital, Wichita.
33. Julius Marks Sanatorium, Lexington, tuberculosis.
34. Children's Free Hospital, Louisville.
35. Charity Hospital and Touro Infirmary, New Orleans, obstetrics, gynecology and pediatrics.
36. Johns Hopkins Hospital, Baltimore, genito-urinary.
37. University of Maryland Hospital and Sydenham Hospital, Baltimore, obstetrics, pediatrics and contagious diseases.
38. Evangeline Booth Maternity Hospital and Home, Boston.
39. Boston City Hospital, obstetrics.
40. Wesson Maternity Hospital, Shriners Hospital for Crippled Children, City Hospital, and Health Department Hospital, Springfield.
41. Merrywood Sanitarium, Ann Arbor, psychiatry.
42. Michigan Mutual Hospital, Detroit, industrial surgery.
43. Herman Kiefer Hospital, Detroit.
44. Herman Kiefer Hospital and Children's Hospital, contagious diseases, obstetrics and pediatrics.
45. St. Joseph's Retreat, Dearborn, psychiatry.
46. Children's Hospital, Detroit, pediatrics.
47. Sunshine Sanatorium, Grand Rapids, tuberculosis.
48. Michigan State Prison Hospital, Jackson, tuberculosis and contagious diseases.
49. Muskegon County Tuberculosis Sanatorium, Muskegon.
50. Gillette State Hospital for Crippled Children, St. Paul.
51. Parkview Sanatorium, Minneapolis.
52. Glen Lake Sanatorium, Oak Terrace, tuberculosis.
53. Shriners Hospital for Crippled Children, Minneapolis.
54. St. Vincent's Maternity Hospital, Kansas City, Mo.
55. St. Anthony's Hospital, St. Louis, obstetrics, gynecology and pediatrics.
56. St. Louis Children's Hospital and Shriners Hospital for Crippled Children.
57. St. Vincent's Sanitarium and St. Ann's Lying-In Hospital, St. Louis, psychiatry and pediatrics.
58. Robert Koch Hospital, City Isolation Hospital, City Sanitarium and City Infirmary, St. Louis.
59. St. Mary's Group of Hospitals includes St. Mary's Hospital, St. Mary's Infirmary and Mt. St. Rose Sanatorium.
60. Municipal Hospital, Atlantic City, contagious diseases; Atlantic County Hospital for Tuberculous Diseases and Atlantic County Hospital for Mental Diseases, Northfield.
61. St. Elizabeth Hospital, Elizabeth, obstetrics.
62. Includes service in Margaret Hague Maternity Hospital, Jersey City.
63. Passaic Municipal Hospital, contagious diseases.
64. Anthony N. Brady Maternity Hospital, Albany.
65. Kingston Avenue Hospital, Brooklyn, contagious diseases.
66. Charles V. Chapin Hospital, Providence, contagious diseases and pediatrics.
67. House of St. Giles the Cripple, Brooklyn.
68. Cumberland Hospital, Brooklyn, obstetrics.
69. Methodist Episcopal Hospital, Brooklyn, obstetrics, gynecology and pediatrics.
70. Jewish Maternity Hospital, New York City.
71. Hospital service in Sloane Hospital for Women, New York City.
72. John E. Berwind Clinic, New York, obstetrics.
73. Includes service in Rochester Municipal Hospital.
74. Schenectady City Hospital, contagious diseases.
75. St. Vincent's Hospital, Staten Island, obstetrics, gynecology and pediatrics.
76. Syracuse Memorial Hospital, obstetrics.
77. Forsyth County Tuberculosis Sanatorium, Winston-Salem.
78. Children's Hospital, Akron, pediatrics and orthopedics.
79. Children's Hospital, Cincinnati, pediatrics.
80. Christian R. Holmes Hospital, Hamilton County Tuberculosis Sanatorium, and Hamilton County Chronic Disease Hospital, Cincinnati.
81. St. Mary's Hospital, Quincy, Ill., obstetrics.
82. St. Ann's Maternity Hospital, Cleveland.
83. City Hospital, Cleveland, contagious diseases and psychiatry.
84. University Hospitals of Cleveland include the Lakeside Hospital, Maternity Hospital, Babies and Children's Hospital, Cleveland, and the Rainbow Hospital for Crippled and Convalescent Children, South Euclid.
85. Children's Hospital, Columbus, pediatrics.
86. Children's Hospital and Starling-Loving University Hospital, Columbus, pediatrics and obstetrics.
87. Lima State Hospital and District Tuberculosis Hospital, Lima.
88. Mahoning Tuberculosis Sanatorium, Youngstown.
89. Shriners Hospital for Crippled Children, Portland.
90. Doernbecher Memorial Hospital, Portland, pediatrics.
91. Portland Medical Hospital.
92. Allentown State Hospital, Allentown, psychiatry.
93. Kensington Hospital for Women, Philadelphia, obstetrics.
94. Philadelphia Hospital for Contagious Diseases.
95. Children's Hospital, Philadelphia, pediatrics.
96. St. Vincent's Hospital for Women and Children, Philadelphia, obstetrics.
97. Shriners Hospital for Crippled Children, Philadelphia, orthopedics and pediatrics.
98. Misericordia Hospital, Philadelphia, obstetrics.
99. Municipal Hospital for Contagious Diseases, Pittsburgh.
100. Tuberculosis League Hospital, Pittsburgh.
101. Elizabeth Steel Magee Hospital, Children's Hospital, and Eye and Ear Hospital, Pittsburgh.
102. Manhattan Maternity and Dispensary, New York City.
103. Providence Lying-In Hospital, Providence.
104. Children's Hospital and Pine Breeze Sanitarium, Chattanooga, pediatrics and tuberculosis.
105. Willard Parker Hospital, New York City, contagious diseases.
106. Bradford Memorial Hospital for Babies and Woodlawn Sanatorium, Dallas, pediatrics and tuberculosis.
107. John Sealy Hospital, Galveston, obstetrics and gynecology.
108. Gulf, Colorado and Santa Fe Hospital and the Scott and White Hospital affiliated furnish one internship.
109. Norfolk Protestant Hospital, Florence Crittenden Home and King's Daughters Clinic, obstetrics and pediatrics.
110. King's Daughters Hospital, Portsmouth, obstetrics.
111. City Home, Richmond, tuberculosis.
112. Blue Ridge Sanatorium, Charlottesville, tuberculosis.
113. Harborview Hospital, Seattle, obstetrics and pediatrics.
114. Includes service in the Morningside Sanitarium and Georgetown Hospital, Seattle.
115. Children's Orthopedic Hospital, Seattle, pediatrics and orthopedics.
116. Children's Orthopedic Hospital, Seattle, pediatrics and orthopedics, and the Firland Sanatorium, Richmond Highlands, tuberculosis and contagious diseases.
117. Edgecliff Sanatorium, Spokane, tuberculosis.
118. Edgecliff Sanatorium and Rivercrest Hospital, Spokane, tuberculosis and contagious diseases; also Eastern State Hospital, Medical Lake, psychiatry.
119. Pierce County Hospital, Tacoma, obstetrics.
120. Hill Crest Sanatorium, Charleston, tuberculosis.
121. Salvation Army Hospital, Huntington.
122. Milwaukee Children's Hospital, pediatrics, and South View Isolation Hospital, contagious diseases.
123. Milwaukee Children's Hospital, pediatrics.
124. Corozal Hospital, Corozal, C.Z., psychiatry, and Colon Hospital, Colon, R.P., general.
125. Kaaikeolani Children's Hospital, Honolulu, pediatrics.
126. San Lazaro Hospital, Manila, contagious diseases.

DESCRIPTION OF MEDICAL COLLEGES

ALABAMA

University

UNIVERSITY OF ALABAMA SCHOOL OF MEDICINE, University.—Organized in 1859 at Mobile as the Medical College of Alabama. Classes graduated in 1861 and subsequent years excepting 1862 to 1868, inclusive. Reorganized in 1897 as the medical department of the University of Alabama. Present title assumed in 1907, when all property was transferred to the University of Alabama. In 1920 clinical teaching was suspended and the medical school was removed to the university campus near Tuscaloosa. Coeducational since 1920. Entrance requirements are seventy semester hours of collegiate work. The course of study covers two years of thirty-six weeks each. The faculty includes 13 professors and 8 instructors, assistants, etc., a total of 21. The tuition fees are $221.50 the first year and $241.50 the second year. Total registration for 1931-1932 was 107. The sixty-seventh session begins Sept. 7, 1932, and ends May 24, 1933. The Dean is Stuart Graves, M.D.

ARKANSAS

Little Rock

UNIVERSITY OF ARKANSAS SCHOOL OF MEDICINE, 300 West Markham Street.—Organized in 1879 as the Medical Department of Arkansas Industrial University. Present title in 1899. In 1911 the College of Physicians and Surgeons united with it and it became an integral part of the University of Arkansas. The first class was graduated in 1880. Clinical teaching was suspended in 1918 but resumed in 1923. Coeducational since organization. The faculty consists of 28 professors and 59 lecturers and assistants, total 87. The curriculum covers four years of nine months each. Entrance requirements are two years of collegiate work in addition to a four-year high school course. The fees for the four years, respectively, for residents of Arkansas are $165, $160, $155 and $155; nonresidents are charged $100 additional each year. The total registration for 1931-1932 was 198; graduates, 46. The fifty-fourth session begins Sept. 21, 1932, and ends June 3, 1933. The Dean is Frank Vinsonhaler, M.D.

CALIFORNIA

Berkeley-San Francisco

UNIVERSITY OF CALIFORNIA MEDICAL SCHOOL, University Campus, Berkeley; Third and Parnassus avenues, San Francisco.—Organized in 1862 as the Toland Medical College. The first class graduated in 1864. In 1872 it became the Medical Department of the University of California. In 1909, by legislative enactment, the College of Medicine of the University of Southern California, at Los Angeles, became a clinical department but was changed to a graduate school in 1914. In 1915 the Hahnemann Medical College of the Pacific was merged, and elective chairs in homeopathic materia medica, and therapeutics were provided. Coeducational since organization. Three years of collegiate work is required for admission. The work of the first year is given at Berkeley and that of the last three years at San Francisco. The faculty is composed of 130 professors and 235 associates and assistants, a total of 365. The course covers four years of eight months each, and an additional fifth year consisting of an internship in a hospital or of special work in a department of the medical school. Fees for the four years, respectively, for residents of California are $290, $225, $225 and $225; nonresidents are charged $300 additional each year. Total registration for 1931-1932 was 231; graduates, 55. The sixtieth session begins Aug. 15, 1932, and ends May 13, 1933. The Dean is Langley Porter, M.D., San Francisco.

Loma Linda-Los Angeles

COLLEGE OF MEDICAL EVANGELISTS.—Organized in 1909. The first class graduated in 1914. The laboratory departments are at Loma Linda, the clinical departments at Los Angeles. Coeducational since organization. The faculty is composed of 54 professors and 197 associates, assistants and instructors, a total of 251. The course covers a period of five years, including one year of internship. During the first and second years, the students are in school twelve months each year. This is accomplished by means of the "cooperative plan," the student spending alternate months in an approved hospital in practical lines of medical training. Sixty-four semester hours of college work is required for admission. The total fees for the four years, respectively, are $385, $375, $480 and $440. The total registration for 1931-1932 was 392; graduates, 82. The twenty-fourth session begins July 1, 1932, and ends June 23, 1933. The Dean of the Loma Linda Division is E. H. Risley, M.D., and the Dean of the Los Angeles Division is Arthur E. Coyne, M.D.

Los Angeles

UNIVERSITY OF SOUTHERN CALIFORNIA SCHOOL OF MEDICINE, 1551 University Avenue.—Organized in 1885 as the University of Southern California College of Medicine. First class graduated in 1888. In 1908 it became the Medical Department of the University of California in Los Angeles. In 1909 the College of Physicians and Surgeons, established in 1904, became the Medical Department of the University of Southern California. Its activities were suspended in 1920; reorganized in May, 1928, under present title. The faculty consists of 116 professors and 64 instructors, assistants and others, a total of 180. During the session of 1931-1932 three years of the medical course was offered. The fourth year of the course will be begun for the first time in September, 1932. A fifth intern year is required. Three years of collegiate work is required for admission. Coeducational since organization. Annual fees amount to $430. The total registration for 1931-1932 was 128. The next session begins Sept. 12, 1932, and ends June 3, 1933. The Dean is Paul S. McKibben, Ph.D.

San Francisco

STANFORD UNIVERSITY SCHOOL OF MEDICINE, 2398 Sacramento Street, San Francisco.—Organized in 1908 when, by an agreement, the interests of Cooper Medical College were taken over. The first class was graduated in 1913. Coeducational since organization. The faculty consists of 96 professors and 127 lecturers, assistants and others, a total of 223. Three years of collegiate work is required for admission. The course covers four years of eight and one-half months each, plus a fifth year of practice or intern work. The fees for the four years, respectively, are $387, $369, $360 and $360. The total registration for 1931-1932 was 195; graduates, 43. The twenty-third session begins Oct. 1, 1932, and ends June 19, 1933. The Dean is Henry George Mehrtens, M. D.

COLORADO

Denver

UNIVERSITY OF COLORADO SCHOOL OF MEDICINE, 4200 East Ninth Avenue.—Organized in 1883. Classes were graduated in 1885 and in all subsequent years except 1898 and 1899. Denver and Gross College of Medicine was merged, Jan. 1, 1911. Coeducational since organization. The faculty is composed of 57 professors and 130 lecturers, instructors and assistants, a total of 187. The course covers four years of nine months each. The college also is urging a year's internship in a hospital. The entrance requirements are three years of college work. The fees for residents of Colorado, for each of the four years are, respectively, $211, $211, $181 and $191. Nonresidents pay $132 more each year. The total registration for 1931-1932 was 208; graduates, 53. The fifty-first session begins Sept. 26, 1932, and ends June 12, 1933. The Dean is Maurice H. Rees, M.D.

CONNECTICUT

New Haven

YALE UNIVERSITY SCHOOL OF MEDICINE, 333 Cedar Street.—Chartered in 1810 as the Medical Institution of Yale College. Organized in 1812; instruction began in 1813; first class graduated in 1814. A new charter in 1879 changed the name to the Medical Department of Yale College. In 1884, the Connecticut Medical Society surrendered such authority as had been granted by the first charter. In 1887, Yale College became Yale University. Coeducational since 1916. The faculty consists of 102 professors and 152 lecturers and assistants, a total of 254. The requirements for admission are three years of collegiate work plus completion of courses in physics, inorganic chemistry, qualitative analysis, general biology, organic chemistry and physical chemistry or laboratory physics, all equivalent to the courses in these subjects in Yale University. The student also must have two years of French or German. The course covers four years of nine months each. The fees for the four years, respectively, are $505, $500, $500 and $520. The total registration for 1931-1932 was 195; graduates, 44. The one hundred and twentieth session begins Sept. 29, 1932, and ends June 14, 1933. The Dean is Milton C. Winternitz, M.D.

DISTRICT OF COLUMBIA

Washington

GEORGETOWN UNIVERSITY SCHOOL OF MEDICINE, 3900 Reservoir Road, N.W.—Organized 1851. First class graduated in 1852. The faculty is composed of 102 professors, 108 instructors and assistants; total, 210. Three years of collegiate work is required for entrance. The course of study covers four terms of eight and one-half months each. The present fees for each of the four sessions, respectively, are $445, $445, $360 and $360. The total registration for 1931-1932 was 598; graduates, 134. The eighty-second session begins Sept. 16, 1932, and ends June 12, 1933. The Dean is William Gerry Morgan, M.D.

GEORGE WASHINGTON UNIVERSITY SCHOOL OF MEDICINE, 1335 H Street, N.W.—Organized in 1825 as the Medical Department of Columbian College. Also authorized to use the name National Medical College. Classes were graduated in 1826 and in all subsequent years except 1834 to 1838, and 1861 to 1863, inclusive. The original title was changed to Medical Department of Columbian University in 1873. In 1903 it absorbed the National University Medical Department. In 1904, by an act of Congress, the title of George Washington University was granted to the institution. Coeducational since 1884. The faculty is composed of 53 professors and 111 instructors, demonstrators and assistants, a total of 164. Two years of collegiate work are required for admission. The course covers four years of thirty-two weeks each. The fees for the four years, respectively, are $491, $491, $491 and $476. The total registration for 1931-1932 was 283; graduates, 57. The one hundred and eighth session begins Sept. 21, 1932, and ends June 3, 1933. The Dean is Earl B. McKinley, M.D.

HOWARD UNIVERSITY COLLEGE OF MEDICINE, Fifth and W streets, N.W.—Chartered in 1867. Organized in 1869. The first class graduated in 1871. Coeducational since 1869. Negro students compose a majority of those in attendance. The faculty comprises 33 professors and 70 lec-

turers and assistants, 103 in all. The admission requirements are at least two years of collegiate work, including physics, chemistry, botany and zoology, English and French or German. The course covers four years of thirty-three weeks each. The fees for each of the four sessions, respectively, are $274.50, $274.50, $264.50 and $264.50. Registration for 1931-1932 was 218; graduates, 55. The sixty-fifth session begins Oct. 3, 1932, and ends June 9, 1933. The Dean is Numa P. G. Adams, M.D.

GEORGIA

Atlanta

EMORY UNIVERSITY SCHOOL OF MEDICINE, 50 Armstrong Street and Druid Hills.—Organized in 1854 as the Atlanta School of Medicine. Classes graduated 1855 to 1861, when it suspended. Reorganized in 1865. A class graduated in 1865 and each subsequent year except 1874. In 1898 it merged with the Southern Medical College (organized in 1878), taking the name of Atlanta College of Physicians and Surgeons. In 1913 it merged with the Atlanta School of Medicine (organized in 1905), reassuming the name of Atlanta Medical College. Became the Medical Department of Emory University in 1915; assumed present title in 1917. Two years of college work is required for admission. The faculty consists of 18 professors and 168 associates and assistants, a total of 186. The course of study is four years of thirty-two weeks each. The fees for each of the four years are $300. Total registration for 1931-1932 was 210; graduates, 53. The next session begins Sept. 28, 1932, and ends June 12, 1933. The Dean is Russell H. Oppenheimer, M.D.

Augusta

UNIVERSITY OF GEORGIA MEDICAL DEPARTMENT, University Place.—Organized in 1828 as the Medical Academy of Georgia, the name being changed to the Medical College of Georgia in 1829. Since 1873 it has been known as the Medical Department of the University of Georgia. Property transferred to university in 1911. Classes were graduated in 1833 and all subsequent years except 1862 and 1863. Coeducation was begun in 1920. The faculty includes 35 professors and 30 assistants, 65 in all. Two years of college work is required for entrance. The course is four years of thirty-four weeks each. The fees for each of the four years, respectively, are $105, $100, $100 and $100 for residents of Georgia, and $300 each year for nonresidents. The total registration for 1931-1932 was 134; graduates, 40. The one hundred and fourth session begins Sept. 26, 1932, and ends June 5, 1933. The Dean is William Lorenzo Moss, M.D.

ILLINOIS

Chicago

LOYOLA UNIVERSITY SCHOOL OF MEDICINE, 706 South Lincoln Street.—Organized in 1868 as the Bennett College of Eclectic Medicine and Surgery. Eclecticism dropped and title of Bennett Medical College assumed in 1909. First class graduated in 1870, and a class graduated each subsequent year. Absorbed the Illinois Medical College in 1910 and the Reliance Medical College in 1911. In 1910 it became by affiliation the School of Medicine of Loyola University; the university assumed full control in 1915. Took over by purchase the Chicago College of Medicine and Surgery in 1917. Coeducational. Two years of college work is required for admission. The course of study is five years, including an internship in a hospital. The faculty is composed of 50 professors and 212 assistants, lecturers, instructors and others, a total of 262. The fees for each year are $363.50, $377.50, $332 and $298, respectively. The total enrolment for 1931-1932 was 500; graduates, 113. The next session begins Oct. 3, 1932, and ends June 10, 1933. The Dean is Louis D. Moorhead, M.D.

NORTHWESTERN UNIVERSITY MEDICAL SCHOOL, 303 East Chicago Avenue.—Organized in 1859 as the Medical Department of Lind University. First class graduated in 1860. In 1864 it became independent as the Chicago Medical College. It united with Northwestern University in 1869 but retained the name of Chicago Medical College until 1891, when the present title was taken. Became an integral part of Northwestern University in 1905. Coeducational since 1926. The faculty comprises 119 professors and 283 lecturers and assistants, a total of 402. The requirements for admission are such as will admit to the College of Liberal Arts of Northwestern University, plus three years of college work, including courses in physics, chemistry, biology and a modern language. The course covers four years of eight months each and a fifth year spent in an approved hospital as an intern or in other practical work. The total fees are $355 each year. The total registration for 1931-1932 was 555; graduates, 116. The seventy-fourth session begins Oct. 4, 1932, and ends June 12, 1933. The Dean is Irving S. Cutter, M.D.

UNIVERSITY OF CHICAGO, Rush Medical College, 1758 West Harrison Street.—Chartered in 1837; held first class in 1843. First class graduated in 1844. In 1887 the college became the medical department of Lake Forest University, retaining, however, its self-government. This relation was dissolved in April, 1898, and in the same month affiliation with the University of Chicago was established. Since that time the work of the first two years has been given on the University Quadrangles. In May, 1924, by a new contract, the University of Chicago took over the work of Rush Medical College as a department of the university. Since 1914 the course has included a fifth year consisting of a hospital internship or of a fellowship in one of the departments. Coeducational since 1898. Classes are limited to 140 students. No application for admission is accepted after June 1. The school operates under the "quarter system," in which the year is divided into four quarters of twelve weeks each; the completion of the work of three of these quarters gives credit for a college year. The faculty is composed of 126 professors, 148 associates, instructors and others, a total of 274. The fee for the third year is $380, and for the fourth $400. Total registration for 1931-1932 was 307; graduates, 134. The eighty-eighth session begins Oct. 3, 1932, and ends June 13, 1933. The school is in session all year except the month of September. The Dean is Ernest E. Irons, M.D.

UNIVERSITY OF CHICAGO, SCHOOL OF MEDICINE OF THE DIVISION OF THE BIOLOGICAL SCIENCES, Fifty-Eighth Street and Ellis Avenue.—Organized in 1924 as a part of the Ogden Graduate School of Science. The work of the first two years of the medical course has been given on the Quadrangles since 1899, and that of the clinical years was added in 1924 with the organization of this medical school. All the work leading to the degree of M.D. may now be done on the Quadrangles. A fifth year, spent in successful internship in an approved hospital or in advanced work in some branch of medical science, is required for graduation. Coeducational. The faculty is composed of 95 professors, 135 associates, instructors and others, a total of 230. The requirements for admission are three years of college work, including courses in college chemistry, physics and biology, and a reading knowledge of German or French. The school operates under the "quarter system," in which the year is divided into four quarters of twelve weeks each; the completion of the work of three of these quarters gives credit for a college year. Students are admitted at the beginning of either autumn or spring quarters. Applications for admission in the autumn should be made in April; for admission in the spring, in January. The tuition fees for each of the four years are $375. Total registration for 1931-1932 was 289; graduates, 19. The next session begins Oct. 3, 1932, and ends June 14, 1933. The Dean of Medical Students is B. C. H. Harvey, M.D.

UNIVERSITY OF ILLINOIS COLLEGE OF MEDICINE, 1853 West Polk Street.—Organized in 1882 as the College of Physicians and Surgeons. The first class graduated in 1883. It became the Medical Department of the University of Illinois by affiliation in 1897. Relationship with the university was canceled in June, 1912, and was restored in March, 1913, when the present title was assumed. Coeducational since 1898. Two years of collegiate work is required for admission. The curriculum covers four years of thirty-two weeks each, and a year of internship in an approved hospital. The faculty is composed of 92 professors and 209 assistants and instructors, a total of 301. The tuition is $200 a year for students who are residents of Illinois; $300 a year for nonresident students. The total registration for 1931-1932 was 589; graduates, 95. The fifty-first session begins Oct. 3, 1932, and ends June 9, 1933. The Dean is David John Davis, M.D.

INDIANA

Bloomington-Indianapolis

INDIANA UNIVERSITY SCHOOL OF MEDICINE.—Organized in 1903 but did not give all the work of the first two years of the medical course until 1905. In 1907, by union with the State College of Physicians and Surgeons, the complete course in medicine was offered. In 1908 the Indiana Medical College, which was formed in 1905 by the merger of the Medical College of Indiana (organized in 1878), the Central College of Physicians and Surgeons (organized in 1879), and the Fort Wayne College of Medicine (organized in 1879) merged into it. The first class was graduated in 1908. Coeducational since organization. The faculty consists of 231 professors, lecturers, associates and assistants. Two years of collegiate work is required for admission. The work of the first year is done at Bloomington. The work of the other three years is given at Indianapolis. The fees for each of the four years, respectively, are $187, $186, $182 and $177 for residents of Indiana, and $75 additional for first year, and $175 additional for last three years, for nonresidents. A fifth optional intern year leading to the "M.D. cum laude" has been added. The total registration for 1931-1932 was 430; graduates, 94. The next session begins Sept. 13, 1932, and ends June 12, 1933. The Dean at Bloomington is B. D. Myers, M.D., and the Dean at Indianapolis is W. D. Gatch, M.D.

IOWA

Iowa City

STATE UNIVERSITY OF IOWA COLLEGE OF MEDICINE, University Campus.—Organized in 1869. First session began in 1870. First class graduated in 1871. Absorbed Drake University College of Medicine in 1913. Coeducational since 1870. The faculty is made up of 46 professors, 63 lecturers, demonstrators and assistants, a total of 109. Two years of college work, including courses in physics, chemistry, biology, German and English, is required for admission. The course of study covers four years of thirty-four weeks each. The tuition fee is $192 each year for residents of Iowa and $456 for nonresidents. Total registration for 1931-1932 was 379; graduates, 99. The sixty-third session begins Sept. 26, 1932, and ends June 5, 1933. The Dean is Henry Spencer Houghton, M.D.

KANSAS

Lawrence-Kansas City

UNIVERSITY OF KANSAS SCHOOL OF MEDICINE.—Organized in 1880. It offered only the first two years of the medical course until 1905, when it merged with the Kansas City (Mo.) Medical College, founded in 1869, the College of Physicians and Surgeons, founded in 1894, and the Medico-Chirurgical College, founded in 1897. Absorbed Kansas Medical College in 1913. First class graduated in 1906. The clinical courses are given at Kansas City. Coeducational since 1880. The faculty includes 23 professors and 137 instructors, assistants and others, a total of 160. The requirement for admission is two years of collegiate work. The course covers four years of nine months each. The total fees for residents of the state for each of the four years are, respectively, $162, $154, $155 and $159. For nonresidents the fees are $50 additional each year. The total registration for 1931-1932 was 254; graduates, 53. The fifty-third session begins Sept. 22, 1932, and ends June 12, 1933. The Dean is H. R. Wahl, M.D., Kansas City.

KENTUCKY

Louisville

UNIVERSITY OF LOUISVILLE SCHOOL OF MEDICINE, First and Chestnut streets.—Organized in 1837 as Louisville Medical Institute. The first class graduated in 1838, and a class graduated each subsequent year except 1863. In 1846 the name was changed to University of Louisville Medical Department. In 1907 it absorbed the Kentucky University Medical Department; in 1908, the Louisville Medical College, the Hospital College of Medicine and the Kentucky School of Medicine. In 1922 it changed its name to the University of Louisville School of Medicine. Coeducational since organization. Two years of college work is required for admission. The faculty numbers 27 professors and 116 assistants, instructors and others, a total of 143. Students limited to 90 freshmen, 90 juniors; number of sophomores and seniors contingent on number promoted. Course covers four years of thirty-two weeks each, exclusive of vacations and examinations. Fees for four years are, respectively, $365, $365, $370 and $380. Total registration for 1931-1932 was 340; graduates, 88. Next session begins Sept. 15, 1932, and ends June 3, 1933. The Dean is John Walker Moore, M.D.

LOUISIANA

New Orleans

TULANE UNIVERSITY OF LOUISIANA SCHOOL OF MEDICINE, 1430 Tulane Avenue.—Organized in 1834 as the Medical College of Louisiana. Classes were graduated in 1835 and in all subsequent years except 1861-1865, inclusive. It was transferred to the Medical Department of the University of Louisiana in 1847, and became the Medical Department of the Tulane University of Louisiana in 1884. Present title in 1913. Coeducational since 1915. The faculty comprises 30 professors and 127 associate and assistant professors, instructors and assistants, a total of 157. The course covers four years of thirty-two weeks each. Two years of collegiate work is required for admission. Total fees for each of the four years, respectively, are $350, $340, $325 and $355. The total registration for 1931-1932 was 483; graduates, 108. The ninety-ninth session begins Sept. 26, 1932, and ends June 7, 1933. The Dean is Charles Cassedy Bass, M.D.

MARYLAND

Baltimore

JOHNS HOPKINS UNIVERSITY SCHOOL OF MEDICINE, Washington and Monument streets.—Organized in 1887. Offered preliminary course only until 1893. The first class graduated in 1897. Coeducational since organization. The faculty consists of 71 professors and 313 instructors, assistants and others, a total of 384. The requirements for admission demand that the applicant possess a collegiate degree and have a knowledge of French and German (two years each of college instruction), physics and biology, such as may be obtained from a years' course, and a two years' course in chemistry. The course extends over four years of eight and one-half months each. The total fees for each year are, respectively, $611, $610, $610 and $610. Total registration for 1931-1932 was 282; graduates, 67. The fortieth session begins Oct. 4, 1932, and ends June 13, 1933. The Dean is Alan M. Chesney, M.D.

UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE AND COLLEGE OF PHYSICIANS AND SURGEONS, Lombard and Greene streets.—Organized in 1807 as the College of Medicine of Maryland. The first class graduated in 1810. In 1812 it became the University of Maryland School of Medicine. Baltimore Medical College was merged into it in 1913. In 1915 the College of Physicians and Surgeons of Baltimore was merged and the present name assumed. Coeducational since 1918. The faculty consists of 92 professors and 141 instructors and assistants, a total of 233. Two years of college work is required for admission. The course covers four years of eight months each. The fees for the four years, respectively, are $385, $375, $375 and $390 for residents of the state; for nonresidents the fees are $150 additional each year. Total registration for 1931-1932 was 420; graduates, 101. The one hundred and twenty-fifth session begins Sept. 26, 1932, and ends June 3, 1933. The Dean is J. M. H. Rowland, M.D.

MASSACHUSETTS

Boston

BOSTON UNIVERSITY SCHOOL OF MEDICINE, 80 East Concord Street.—Organized in 1873 as a homeopathic institution. In 1874 the New England Female Medical College, founded in 1848, was merged into it. The first class was graduated in 1874. Became nonsectarian in 1918. Coeducational since organization. Three years of collegiate work is required for admission. The faculty includes 19 professors, 153 associates and others, a total of 172. The course covers four years: first three years, thirty-two weeks; fourth year, thirty-six weeks. Total fees for each of the four years, respectively, are $421.50, $421.50, $396.50 and $406.50. Total registration for 1931-1932 was 234; graduates, 52. The sixtieth session begins Sept. 22, 1932, and ends June 12, 1933. The Dean is Alexander S. Begg, M.D.

HARVARD UNIVERSITY MEDICAL SCHOOL, 240 Longwood Avenue.—Organized in 1782. The first class graduated in 1788. It has a faculty of 114 professors and 345 instructors and assistants, a total of 459. Candidates for admission must present a college degree or two years of work leading to such a degree with standing in the upper third of the class. The college work must include a year of physics, biology and general chemistry, a half year of organic chemistry, and a reading knowledge of French or German. The total fee for each of the four years is $400 plus $5 the first year for matriculation. The total registration for 1931-1932 was 517; graduates, 136. The one hundred and fiftieth session begins Sept. 26, 1932, and ends June 22, 1933. The Dean is David L. Edsall, M.D.

TUFTS COLLEGE MEDICAL SCHOOL, 416 Huntington Avenue.—Organized in 1893 as the Medical Department of Tufts College. The first class graduated in 1894. Coeducational since 1894. It has a faculty of 66 professors and 219 assistants, lecturers and others, a total of 285. A minimum of two years of collegiate work is required for admission, but applicants with degrees are given preference. The course covers four years of eight months each. The total fees for each of the four years are $400, $400, $400 and $350. Total registration for 1931-1932 was 465; graduates, 117. The thirty-seventh session begins Sept. 28, 1932, and ends June 19, 1933. The Dean is A. Warren Stearns, M.D.

MICHIGAN

Ann Arbor

UNIVERSITY OF MICHIGAN MEDICAL SCHOOL.—Organized in 1850 as the University of Michigan Department of Medicine and Surgery. The first class graduated in 1851. Present title assumed in 1915. Coeducational since organization. It has a faculty of 22 professors, 12 associate professors, 30 assistant professors, 70 instructors and lecturers; a total of 134. The entrance requirements are ninety semester hours, including courses in chemistry, physics and biology, with laboratory work, and two years of French or German, and one year of the other, one year of which must be of college grade. The curriculum covers four years of nine months each. The total fees for Michigan students are $200, $205, $205 and $202.50 for each of the four years, respectively, plus a matriculation fee of $10; for nonresidents, $100 a year additional. The matriculation fee for nonresidents is $25. The total registration for 1931-1932 was 514; graduates, 130. The eighty-third session begins Sept. 26, 1932, and ends June 19, 1933. The Secretary is Arthur C. Curtis, M.D.

Detroit

DETROIT COLLEGE OF MEDICINE AND SURGERY, 1516 St. Antoine Street.—Organized as the Detroit College of Medicine in 1885 by consolidation of Detroit Medical College, organized in 1868, and the Michigan College of Medicine, organized in 1880. Reorganized with present title in 1913. The first class graduated in 1886. In 1918 it became a municipal institution under the control of the Detroit Board of Education. Coeducational since 1917. Entrance requirement is an academic degree or 90 semester hours of academic credit with "combined degree" guaranteed by school of arts and sciences. The faculty consists of 33 professors, 101 lecturers and others, a total of 134. The course covers four years of nine months each and a fifth hospital intern year. The total fees for each of the first four years are, for Detroit residents, $275; for nonresidents who reside in Michigan, $375, and for nonresidents from outside the state, $400. For the fifth or intern year the resident student fee is $75, the nonresident fee is $110. The total registration for 1931-1932 was 315; graduates, 66. The forty-eighth session begins Sept. 29, 1932, and ends June 20, 1933. The Dean is W. H. MacCraken, M.D.

MINNESOTA

Minneapolis

UNIVERSITY OF MINNESOTA MEDICAL SCHOOL.—Organized in 1883 as the University of Minnesota College of Medicine and Surgery, reorganized in 1888 by absorption of St. Paul Medical College and Minnesota Hospital College. The first class graduated in 1889. In 1908 the Minneapolis College of Physicians and Surgeons, organized in 1883, was merged. In 1909 the Homeopathic College of Medicine and Surgery was merged. Present title in 1913. Coeducational since organization. The faculty includes 176 professors and 155 instructors and assistants, a total of 331. The curriculum covers four years of nine months each, and a year's internship in an approved hospital. The school is operated on the four-quarter plan. The entrance requirements are two years of university work, which must include six semester credits of rhetoric, eight semester credits of physics; thirteen credits of general chemistry, qualitative and quantitative analysis and organic chemistry, eight credits of zoology, and a reading knowledge of scientific German. Students are required to secure a degree of B.S. or A.B. before receiving the degree of Bachelor of Medicine (M.B.) which is granted at the end of the four-year course. The M.D. degree is conferred after a year of intern work, of advanced laboratory work, or of public health work has been completed. Classes are graduated three times a year, in March, June and December (after 1932, no December class). Total fees are $243 for residents and $318 for nonresidents, each year of three quarters; incidental fee of $6 per quarter also. The total registration for 1931-1932 was 465; graduates, 129. The forty-fourth session begins Oct. 3, 1932, and ends June 17, 1933. The Dean is Elias P. Lyon, M.D.; Dean of Medical Sciences, Richard E. Scammon, Ph.D.

MISSISSIPPI

University

UNIVERSITY OF MISSISSIPPI SCHOOL OF MEDICINE.—Organized in 1903. Coeducational since organization. Gives only the first two years of the medical course. A clinical department was established at Vicksburg in 1908 but was discontinued in 1910 after graduating one class. The session extends over eight and one-half months. Entrance requirement is two years of collegiate work. The faculty numbers 8 professors and 7 instructors, assistants and others, a total of 15. The total fees each year for residents are $200.75; for nonresidents, $50 additional per

year. The total registration for 1931-1932 was 53. The thirtieth session begins Sept. 21, 1932, and ends June 4, 1933. The Dean is P. L. Mull, M.D.

MISSOURI

Columbia

UNIVERSITY OF MISSOURI SCHOOL OF MEDICINE.—Organized at St. Louis in 1845; was discontinued in 1855 but was reorganized at Columbia in 1872. Teaching of the clinical years was suspended in 1909 and restored in 1931. Effective September, 1932, the third year and the proposed fourth year will be discontinued. Coeducational since 1872. The faculty includes 13 professors and 10 assistant professors, lecturers and others, a total of 23. The entrance requirements are 90 semester hours of college work, including French or German, 8 hours; general zoology, 8 hours; physics, 8 hours; inorganic chemistry, 8 hours; organic chemistry, 5 hours, and general bacteriology, 3 hours. Total fees for the first year are $170; for the second, $150. Nonresidents of the state pay $25 per term extra. Total registration for 1931-1932 was 93. The next session begins Sept. 12, 1932, and ends June 7, 1933. The Dean is Edgar Allen, Ph.D.

St. Louis

ST. LOUIS UNIVERSITY SCHOOL OF MEDICINE, 1402 South Grand Boulevard.—Organized in 1901 as the Marion-Sims-Beaumont Medical College by union of Marion-Sims Medical College, organized in 1890, and Beaumont Hospital Medical College, organized in 1886. First class graduated in 1902. It became the Medical School of St. Louis University in 1903. The faculty is composed of 77 professors and 227 instructors and assistants, a total of 304. The requirement for admission is a qualitative standard of two years of collegiate study in the customary subjects, but applicants presenting meritorius credit in excess of the two year minimum are accepted by preference. The curriculum covers four years of thirty-two weeks each. The summer is optional and offers courses academically equivalent to those in the regular session. The total fees for the four years, respectively, are $395, $390, $390 and $410. The total registration for 1931-1932 was 514; graduates, 104. The next session begins Sept. 21, 1932, and ends June 1, 1933. The Dean is Alphonse M. Schwitalla, S.J., Ph.D.

WASHINGTON UNIVERSITY SCHOOL OF MEDICINE, Kingshighway and Euclid Avenue.—Organized in 1842 as the Medical Department of St. Louis University. The first class graduated in 1843. In 1855 it was chartered as an independent institution under the name of St. Louis Medical College. In 1891 it became the Medical Department of Washington University. In 1899 it absorbed the Missouri Medical College. Coeducational since 1918. The faculty comprises 52 professors and 243 lecturers, instructors and others, a total of 295. Four years of college work is required for admission, including courses in English, physics, chemistry and biology, and a reading knowledge of German or French. The course is four years of eight months each. The total fees for the four years are, respectively, $424, $419, $419 and $424. The total registration for 1931-1932 was 333; graduates, 88. The next session begins Sept. 22, 1932, and ends June 6, 1933. The Dean is W. McKim MARRIOTT, M.D.

NEBRASKA

Omaha

CREIGHTON UNIVERSITY SCHOOL OF MEDICINE, 306 North Fourteenth Street.—Organized in 1892 as the John A. Creighton Medical College. The first class graduated in 1893. Present title in 1921. Coeducational since organization. It has a faculty of 61 professors and 61 instructors, lecturers and assistants, a total of 122. Two years of collegiate work is required for admission. The curriculum covers four years of eight months each. The total fees each year for the four years are, respectively, $393.50, $391, $348.50 and $346. Total registration for 1931-1932 was 288; graduates, 51. The fifty-first session begins Sept. 22, 1932, and ends June 1, 1933. The actige dean is John J. McInerny, S.J.

UNIVERSITY OF NEBRASKA COLLEGE OF MEDICINE, Forty-Second Street and Dewey Avenue.—Organized in 1881 as the Omaha Medical College. The first class graduated in 1882. It became the Medical Department of Omaha University in 1891. In 1902 it affiliated with the University of Nebraska, with the present title. The instruction of the first two years was given at Lincoln and of the last two at Omaha until 1913, when the work of all four years was transferred to Omaha. Coeducational since 1882. The faculty is composed of 70 professors and 58 lecturers and instructors, a total of 128. Sixty-five semester hours of collegiate work is required for admission, including courses in physics, chemistry and zoology. The fees for each of the four years, respectively, are $217, $212, $212 and $212. Total registration for 1931-1932 was 336; graduates, 78. The next session begins Sept. 16, 1932, and ends June 5, 1933. The Dean is C. W. M. Poynter, M.D.

NEW HAMPSHIRE

Hanover

DARTMOUTH MEDICAL SCHOOL.—Organized as New Hampshire Medical Institute in 1797. The first class graduated in 1798. It is under the control of the trustees of Dartmouth College. Clinical teaching was discontinued in 1914. The faculty consists of 16 professors and 11 instructors, a total of 27. Three years of collegiate work is required for admission. The course covers nine calendar months in each year, or eight months of actual teaching. Candidates for the A.B. degree in Dartmouth College may substitute the work of the first year in medicine for that of the senior year in the academic department. The fees for the first year are $410 and $400 for the second year. The total registration for 1931-1932 was 40. The next session begins Sept. 22, 1932, and ends June 20, 1933. The Dean is John P. Bowler, M.D.

NEW YORK

Albany

ALBANY MEDICAL COLLEGE, 47 New Scotland Avenue.—Organized in 1838. The first class graduated in 1839. It became the Medical Department of Union University in 1873. In 1915, Union University assumed educational control. Coeducational since 1915. The faculty is composed of 24 professors and 114 instructors, assistants and others, a total of 138. Two years of collegiate work, including college courses in physics, chemistry (including organic and analytic), biology, English, and a modern foreign language, is required for admission. The curriculum covers four years of eight months each. The total fees for the four years, respectively, are $430, $405, $305 and $305. The total registration for 1931-1932 was 120; graduates, 27. The one hundred and second session begins Sept. 26, 1932, and ends June 12, 1933. The Dean is Thomas Ordway, M.D.

Brooklyn

LONG ISLAND COLLEGE OF MEDICINE, 350 Henry Street.—Organized in 1858 as the Long Island College Hospital. The first class graduated in 1860 and the last class in 1930. Reorganized with a new charter in 1930 as the present institution. The first class graduated in 1931. Coeducational. It has a faculty of 113 professors and 111 assistants, instructors and others, a total of 224. Seventy-two semester hours of collegiate work, including college courses in physics, chemistry and biology, are required for admission. The course covers four years of eight months each. The total fees for each of the four years are, respectively, $545, $560, $530 and $560. Total registration for 1931-1932 was 433; graduates, 110. The second session begins Oct. 3, 1932, and ends June 10, 1933. The Dean is Adam M. Miller, A.M.

Buffalo

UNIVERSITY OF BUFFALO SCHOOL OF MEDICINE, 24 High Street.—Organized in 1846. The first class graduated in 1847. It absorbed the Medical Department of Niagara University in 1898. Coeducational since organization. The faculty is composed of 71 professors and 154 associates, assistants and others, a total of 225. Two years of collegiate work, including college courses in physics, chemistry, biology, English and French or German, is required for admission. The course covers four years of eight months each. The total fees for each of the four years are, respectively, $527, $522, $517 and $527. Total registration for 1931-1932 was 273; graduates, 59. The eighty-seventh session begins Oct. 3, 1932, and ends June 14, 1933. The Dean is Edward W. Koch, M.D.

New York

COLUMBIA UNIVERSITY COLLEGE OF PHYSICIANS AND SURGEONS, 630 West One Hundred and Sixty-Eighth Street.—The medical faculty of Columbia College, then known as King's College, was organized in 1767. Instruction was interrupted by the War of the Revolution. The faculty was reestablished in 1792 and merged in 1814 with the College of Physicians and Surgeons, which had received an independent charter in 1807. In 1860 the College of Physicians and Surgeons became the Medical Department of Columbia College. This merger became permanent by legislative enactment in 1891. Columbia College became Columbia University in 1896. The Medical School has been coeducational since 1917. The faculty is composed of 191 professors and 366 instructors, demonstrators and others, a total of 557. Three years of collegiate work including courses in physics, chemistry, biology and English constitutes the minimum requirement for admission. The work covers four years of eight months each. The total fees for the four years, respectively, are $535, $520, $520 and $540. Total registration for 1931-1932 was 408; graduates, 102. The one hundred and twenty-fifth session begins Sept. 28, 1932, and ends June 7, 1933. The Dean is Willard C. Rappleye, M.D.

CORNELL UNIVERSITY MEDICAL COLLEGE, York Avenue and Sixty-Ninth Street.—Organized in 1898. The work of the first year may be taken either in Ithaca or in New York. Coeducational since organization. The faculty is composed of 112 professors and 175 assistants, lecturers, instructors and others, a total of 287. All candidates for admission must be graduates of approved colleges or scientific schools or seniors of approved colleges that will permit them to substitute the first year of this medical school for the fourth year of their college course and will confer on them the bachelor degree on the completion of the first year's work. The candidate must also have a knowledge of physics, chemistry, biology, English and a modern language. The fees for each of the four years are, respectively, $510, $500, $510 and $525. Total registration for 1931-1932 was 439 (including Ithaca students); graduates, 60. The thirty-fifth session begins Sept. 26, 1932, and ends June 8, 1933. The Director is G. Canby Robinson, M.D.

NEW YORK HOMEOPATHIC COLLEGE AND FLOWER HOSPITAL, 450 East Sixty-Fourth Street.—Organized in 1858. Incorporated in 1860 as the Homeopathic Medical College of the State of New York. The title New York Homeopathic Medical College was assumed in 1869; present title in 1908. The first class graduated in 1861. Coeducational since 1919. Two years of collegiate work is required for admission. The course covers four years of eight months each. It has a faculty of 53 professors and associate professors, 18 assistant professors and 98 lecturers and assistants, a total of 169. The total fees for the four years are, respectively, $540, $530, $530 and $560. Total registration for 1931-1932 was 332; graduates, 78. The seventy-third session begins Sept. 19, 1932, and ends June 6, 1933. The Dean is Claude A. Burrett, M.D.

UNIVERSITY AND BELLEVUE HOSPITAL MEDICAL COLLEGE, 338 East Twenty-Sixth Street.—Organized in 1898 by the union of the New York University Medical College, organized in 1841, and the Bellevue Hospital Medical College, organized in 1861. It is the Medical Depart-

ment of New York University. First class graduated in 1899. Coeducational since 1919. The faculty is composed of 107 professors, associate, assistant, clinical and assistant clinical professors, and 206 lecturers, instructors and others, a total of 313. The course covers four years; the work for each of the first three years consists of nine months, and for the fourth year, eleven months. Entrance requirements are that all candidates must be graduates of approved colleges or scientific schools, or seniors in good standing in approved colleges or scientific schools on condition that their faculty will permit them to substitute the first year in University and Bellevue Hospital Medical College for the fourth year of their college course and will confer on them the bachelor degree on the satisfactory completion of the year's work. The fees for the four years, respectively, are $545, $533, $522 and $538. Total registration for 1931-1932 was 479; graduates, 113. The next session begins Sept. 14, 1932, except for the fourth year students who reported for ward work on May 31, 1932, and ends June 7, 1933. The Dean is John Wyckoff, M.D.

Rochester

University of Rochester School of Medicine, Elmwood Avenue and Crittenden Boulevard.—Organized in 1925 as the Medical Department of the University of Rochester. Coeducational since organization. The faculty is composed of 55 professors, 134 lecturers, assistants, instructors and others, a total of 189. The work embraces a graded course of four years of nine months each. Three years of collegiate work is required for admission. The total fees for each year are $400. The total registration for 1931-1932 was 172; graduates, 34. The eighth session begins Sept. 19, 1932, and ends June 19, 1933. The Dean is George Hoyt Whipple, M.D.

Syracuse

Syracuse University College of Medicine, 309-311 South McBride Street.—Organized in 1872, when the Geneva Medical College, chartered in 1834, was removed to Syracuse, under the title "The College of Physicians and Surgeons of Syracuse University." Present title assumed in 1875, when a compulsory three-year graded course was established. The first class graduated in 1873 and a class graduated each subsequent year. In 1889 the amalgamation with the university was made complete. Course extended to four years in 1896. Coeducational since organization. The faculty is composed of 37 professors and 155 associate and assistant professors, lecturers and instructors, a total of 192. Two years of a recognized college course is required for admission. The course covers four years of thirty-four weeks each. The fee for each of the first three years is $500; for the fourth year, $510. The total enrolment for 1931-1932 was 193; graduates, 47. The sixty-second session begins Sept. 23, 1932, and ends June 5, 1933. The Dean is H. G. Weiskotten, M.D.

NORTH CAROLINA

Chapel Hill

University of North Carolina School of Medicine.—Organized in 1890. Until 1902 this school gave only the work of the first two years, when the course was extended to four years by the establishment of a department at Raleigh. The first class graduated in 1903. A class was graduated each subsequent year, including 1910, when the clinical department at Raleigh was discontinued. Coeducational since 1914. Two years of collegiate work is required for admission. The faculty is composed of 9 professors and 3 instructors, a total of 12. The fees for each year are $250 for residents; nonresidents, an additional fee of $100. The total registration for 1931-1932 was 75. The forty-seventh session begins Sept. 23, 1932, and ends June 1, 1933. The Dean is I. H. Manning, M.D.

Durham

Duke University School of Medicine.—Organized in 1925. The first class was admitted, Oct. 1, 1930. Coeducational. The faculty is composed of 8 professors and 64 associate and assistant professors, lecturers, instructors and assistants, a total of 72. The entrance requirements are intelligence and character, plus seventy hours of college work, including two years each of chemistry and English, and one year each of biology, physics and mathematics. The academic year consists of four quarters of eleven weeks each. Students may either study four quarters each year, and if satisfactory will receive the M.D. certificate after three calendar years, or three quarters in each year, and if satisfactory be graduated after four calendar years. The object of utilizing the summer quarters is to provide more time for longer postgraduate intern training. Duke University will grant the degree of Bachelor of Science to students who have completed satisfactorily seventy semester hours in Duke University or some other approved university, six quarters in the Duke University School of Medicine, creditable extra work and have written an acceptable thesis. Students are urged to spend three years in hospital or laboratory work after graduation and must give assurance satisfactory to the executive committee that they will spend at least two years. The fees are $450 for each year of three quarters. Total registration for 1931-1932 was 147; graduates, 18. The next session begins Oct. 3, 1932, and ends Sept. 3, 1933. The Dean is Wilburt C. Davison, M.D.

Wake Forest

Wake Forest College School of Medicine.—This school was organized in 1902. The faculty, including the professors of chemistry, physics and biology, numbers 9 professors and 5 assistants, a total of 14. Sixty-two semester hours of collegiate work is required for admission. Only the first two years of the medical course is offered. After the completion of freshman and sophomore college work and two years of medicine, a certificate will be given. The B.S. degree in medicine will be given only after completion of three years of college work and two years of medicine. Each annual course extends over nine months. The fees for the first year are $220 and $225 for the second year. The total registration for 1931-1932 was 59. The thirty-first session begins Sept. 13, 1932, and ends June 1, 1933. The Dean is Thurman D. Kitchin, M.D.

NORTH DAKOTA

Grand Forks

University of North Dakota School of Medicine.—Organized in 1905. Offers only the first two years of the medical course. Coeducational since organization. Two years' work in a college of liberal arts is required for admission. The faculty consists of 5 professors and 8 instructors, a total of 13. The fees are $75 each year for resident students and $165 for nonresidents. The total registration for 1931-1932 was 55. The twenty-seventh session begins Sept. 20, 1932, and ends June 13, 1933. The Dean is H. E. French, M.D.

OHIO

Cincinnati

University of Cincinnati College of Medicine, Eden and Bethesda avenues.—Organized in 1909 by the union of the Medical College of Ohio (founded in 1819) with the Miami Medical College (founded in 1852). The Medical College of Ohio became the Medical Department of the University of Cincinnati in 1896. Under a similar agreement, March 2, 1909, the Miami Medical College also merged into the University, when the title of Ohio-Miami Medical College of the University of Cincinnati was taken. Present title assumed in 1915. Coeducational since organization. Two years of college work are required for admission. Commencing in 1934, candidates for admission to the freshman class must present three years of college preparation of not less than ninety hours (completed in a college of satisfactory standing). The faculty consists of 95 professors and 155 associates, assistants, etc., a total of 250. The course covers four years of eight months each. A year's internship in an approved hospital is also required. The total fees for the four years are, respectively, $360, $360, $360 and $380, and if not legal citizens of Cincinnati, $50 additional. The total registration for 1931-1932 was 307; graduates, 61. The next session begins Sept. 19, 1932, and ends June 10, 1933. The Dean is Arthur C. Bachmeyer, M.D.

Cleveland

Western Reserve University School of Medicine, 2109 Adelbert Road.—Organized in 1843 as the Cleveland Medical College. The first class graduated in 1844. It assumed the present title in 1881. In 1910 the Cleveland College of Physicians and Surgeons was merged. Coeducational since 1919. The faculty includes 66 professors and 159 lecturers, assistants and others, a total of 225. The curriculum covers three years of eight and one-half months each and one year of nine months. Graduation from an approved college or scientific school or equivalent, following completion of a course of at least three collegiate years, is required for admission. The total fees for each of the four years are, respectively, $442, $435, $415 and $425. The total registration for 1931-1932 was 258; graduates, 57. The ninetieth session begins Sept. 15, 1932 and ends June 15, 1933. The Dean is Torald Sollmann, M.D.

Columbus

Ohio State University College of Medicine, Neil and Eleventh avenues.—Organized in 1907 as the Starling-Ohio Medical College by the union of Starling Medical College (organized in 1847) with the Ohio Medical University (organized 1890). In 1914 it became an integral part of the Ohio State University with its present title. Coeducational since organization. The faculty consists of 48 professors and assistant professors, 76 lecturers, instructors, demonstrators and others, a total of 124. Two years of collegiate work is required for admission. The course covers four years of thirty-four weeks each. Tuition fees are $196, $186, $186 and $196 each year, respectively, for residents of Ohio, and $150 additional for nonresidents. The total registration for 1931-1932 was 353; graduates, 75. The next session begins Oct. 4, 1932, and ends June 14, 1933. The Dean is J. H. J. Upham, M.D.

OKLAHOMA

Oklahoma City

University of Oklahoma School of Medicine.—Organized in 1900. Gave only the first two years of the medical course at Norman until 1910, when a clinical department was established at Oklahoma City. The first class graduated in 1911. Coeducational since organization. Beginning September, 1928, the entire course has been given at Oklahoma City. It has a faculty of 30 professors, 44 associate and assistant professors and 63 instructors, a total of 137. Two years of college work is required for admission. The course covers four years of nine months each. Since 1928 the course has included a fifth year consisting of a hospital internship, which will affect graduates of 1933. An optional course of six years is offered for the degree of B.S. and M.D. The total fees for the four years are, respectively, $128, $95.50, $33 and $25.50. For students residing outside the state of Oklahoma there is a tuition fee of $200 a year. The total registration for 1931-1932 was 236, graduates, 47. The thirty-second session begins Sept. 19, 1932, and ends June 5, 1933. The Dean is Lewis Jefferson Moorman, M.D.

OREGON

Portland

University of Oregon Medical School, Marquam Hill.—Organized in 1887. The first class graduated in 1888, and a class graduated each subsequent year except 1898. The Willamette University Medical Department was merged in 1913. Coeducational since organization. It has a faculty of 60 professors and 141 lecturers, assistants and others,

a total of 201. Entrance requirements are three years of college work or its equivalent. The course is four years of thirty-three weeks each. The total fees for the four years are, respectively, $220, $215, $210 and $210 for residents of Oregon, and $60 a year additional for nonresidents. The total registration for 1931-1932 was 246; graduates, 55. The forty-sixth session begins Oct. 1, 1932, and ends June 12, 1933. The Dean is Richard B. Dillehunt, M.D.

PENNSYLVANIA

Philadelphia

HAHNEMANN MEDICAL COLLEGE AND HOSPITAL OF PHILADELPHIA, 235 North Fifteenth Street.—Organized in 1848 as the Homeopathic Medical College of Pennsylvania. In 1869 it united with the Hahnemann Medical College of Philadelphia, taking the latter title. Assumed present title in 1885. The first class graduated in 1849. Entrance requirements are a completed course in a standard secondary school and in addition two years devoted to a college course including English and either French, German or Spanish, physics, chemistry and biology. It has a faculty of 65 professors and 118 lecturers, instructors and others, in all, 183. The work covers four years of eight and one-half months each. Fees for each of the four years are, respectively, $405, $402, $352 and $375. The total registration for the college year 1931-1932 was 481; graduates, 111. The eighty-fourth session begins Oct. 3, 1932, and ends June 15, 1933. The Dean is William A. Pearson, M.D.

JEFFERSON MEDICAL COLLEGE OF PHILADELPHIA, 1019 Walnut Street.—Organized in 1825 as the Medical Department of Jefferson College, Canonsburg, Pa. It was chartered with its present title in 1838. Classes have been graduated annually since 1826. In 1838 a separate university charter was granted without change of title, since which time it has continued under the direction of its own board of trustees. It has a faculty of 65 professors, associate and assistant professors and 183 associates, lecturers, demonstrators and instructors, a total of 248. Entrance requirements are a completed standard four-year high school of college preparatory course, or the equivalent, and in addition three years of work leading to a degree in an approved college of arts and science, including specified courses in physics, general and organic chemistry and biology, with laboratory work in each subject. The course of study covers four years of eight and one-half months each. The total fees for the four years are, respectively, $445, $430, $425 and $425. The total registration for 1931-1932 was 580; graduates, 143. The one hundred and eighth session begins Sept. 21, 1932, and ends June 2, 1933. The Dean is Ross V. Patterson, M.D.

TEMPLE UNIVERSITY SCHOOL OF MEDICINE, Broad and Ontario streets.—Organized in 1901. The first class graduated in 1904. Coeducational since organization. The faculty numbers 26 professors and 174 associates, assistants and others, a total of 200. Three years of college work is required for admission. The fees for each of the four years, respectively, are $485, $455, $435 and $455. The total registration for 1931-1932 was 448; graduates, 107. The thirty-first session begins Sept. 28, 1932, and ends June 15, 1933. The Dean is William N. Parkinson, M.D.

UNIVERSITY OF PENNSYLVANIA SCHOOL OF MEDICINE, Thirty-Sixth and Pine streets.—Organized in 1765. Classes were graduated in 1768 and in all subsequent years except 1772 and 1775-1779, inclusive. The original title was the Department of Medicine, College of Philadelphia. The present title was adopted in 1909. It granted the first medical diploma issued in America. In 1916 it took over the Medico-Chirurgical College of Philadelphia to develop it as a graduate school. Coeducational since 1915. The faculty consists of 87 professors, associate and assistant professors, and 278 lecturers, associates, instructors and others, a total of 365. Three years of college work is required for admission, including courses in physics, biology or zoology, chemistry, including general inorganic, organic and analytic, English and French or German. The first class is limited to 120 students; third and fourth to 135 each. The course covers four years of thirty-three weeks each. The tuition fee is $500 each year, with a deposit fee of $15, a student health fee of $10 and a matriculation fee of $5. Total registration for 1931-1932 was 501; graduates, 132. The one hundred and sixty-seventh session begins Sept. 26, 1932, and ends June 21, 1933. The Dean is William Pepper, M.D.

WOMAN'S MEDICAL COLLEGE OF PENNSYLVANIA, Henry Avenue and Abbottsford Road, East Falls.—Organized in 1850. Classes were graduated in 1852 and in all subsequent years except 1862. It has a faculty of 31 professors and 63 assistants, lecturers and others, in all, 94. Entrance requirements are a completed course in a standard secondary school, and in addition two years of collegiate work, including courses in physics, chemistry, biology, English and French or German. The curriculum covers four years of eight months each. Total fees for each of the four years are, respectively, $388, $407, $432 and $454. The total registration for 1931-1932 was 127; graduates, 22. The eighty-third session begins Sept. 21, 1932, and ends June 7, 1933. The Dean is Martha Tracy, M.D.

Pittsburgh

UNIVERSITY OF PITTSBURGH SCHOOL OF MEDICINE, Bigelow Boulevard.—Organized in 1886 as the Western Pennsylvania Medical College and in 1908 became an integral part of the University of Pittsburgh, removing to the university campus in 1910. The first class graduated in 1887. Coeducational since 1899. The faculty is composed of 22 professors and 200 associates, assistants and others, 222 in all. Entrance requirements are two years of college work, including English, chemistry (inorganic and organic), physics and biology. The course of study is four years of eight and one-half months each. The total fees for the four years, respectively, are $415, $400, $400 and $410. The total registration for 1931-1932 was 264; graduates, 66. The forty-seventh session begins Sept. 26, 1932, and ends June 7, 1933. The Dean is R. R. Huggins, M. D.

SOUTH CAROLINA

Charleston

MEDICAL COLLEGE OF THE STATE OF SOUTH CAROLINA, 16 Lucas Street.—Organized in 1823 as the Medical College of South Carolina. The first class graduated in 1825. In 1832 a medical college bearing the present title was chartered and the two schools continued as separate institutions until they were merged in 1838. Classes were graduated in all years except 1862 to 1865, inclusive. In 1913, by legislative enactment, it became a state institution. Coeducational from 1895 to 1912, when privileges for women were withdrawn, being restored in 1917. It has a faculty of 38 professors and 42 lecturers, instructors and others, a total of 80. The course covers four years of eight months each. The minimum requirements for admission are graduation from an approved four-year high school and satisfactory completion of two years of college work. The total fees are $285, $285, $290 and $290 each year, respectively. Total enrolment for 1931-1932 was 144; graduates, 33. The one hundred and third session begins Sept. 22, 1932, and ends June 1, 1933. The Dean is Robert Wilson, M. D.

SOUTH DAKOTA

Vermilion

UNIVERSITY OF SOUTH DAKOTA SCHOOL OF MEDICINE.—Organized in 1907. Coeducational since organization. Offers only the first two years of the medical course. Two years' work in a college of liberal arts is required for admission. The faculty numbers 10. The fees are $100 each year for residents and $150 for nonresidents. The total registration for 1931-1932 was 42. The twenty-sixth session begins Sept. 12, 1932, and ends June 5, 1933. The Dean is Augustus G. Pohlman, M.D.

TENNESSEE

Memphis

UNIVERSITY OF TENNESSEE COLLEGE OF MEDICINE, 847 Union Avenue.—Organized in 1876 at Nashville as Nashville Medical College. First class graduated 1877, and a class graduated each subsequent year. Became Medical Department of University of Tennessee in 1879. In 1909 it united with the Medical Department of the University of Nashville to form the joint Medical Department of the Universities of Nashville and Tennessee. This union was dissolved in 1911. The trustees of the University of Nashville by formal action of that board named the University of Tennessee College of Medicine as its legal successor. In 1911 it moved to Memphis, where it united with the College of Physicians and Surgeons. The Memphis Hospital Medical College was merged in 1913. Lincoln Memorial University Medical Department was merged in 1914. Coeducational since 1911. The faculty includes 80 professors and 140 assistants, instructors and others, a total of 220. Entrance requirements are a high school education and ninety quarter hours of collegiate work. Students taking the two-year premedical course in Knoxville may secure the B.S. and M.D. degrees. The fees are: for the first quarter, $133.50; second to sixth quarters, $113.50 each; seventh to ninth quarters, $108.50 each; tenth to twelfth quarters, $118.50 each. For residents of the state the charge is reduced $50 each quarter. Total registration for 1931-1932 was 439; graduates, 128. During the academic year 1932-1933, the quarters begin July 9, Sept. 26, Dec. 31 and March 20, and end Sept. 28, Dec. 17, March 22 and June 10. The Dean is O. W. Hyman, Ph.D.

Nashville

MEHARRY MEDICAL COLLEGE, Eighteenth Avenue North and Heffernan Street.—This school was organized in 1876 as the Meharry Medical Department of Central Tennessee College, which became Walden University in 1900. First class graduated in 1877. Obtained new charter independent of Walden University in 1915. Coeducational since 1876. The faculty is made up of 24 professors and 33 instructors, demonstrators, lecturers and others, 57 in all. Two years' work in a college of liberal arts is required for admission. The curriculum covers four years of thirty-two weeks each. Tuition fees are, respectively, $250, $250, $250 and $260 each year. Total registration for 1931-1932 was 192; graduates, 51. The fifty-seventh session begins Oct. 1, 1932, and ends May 25, 1933. The President is John J. Mullowney, M.D.

VANDERBILT UNIVERSITY SCHOOL OF MEDICINE, Twenty-First and Edgehill.—This school was founded in 1874. The first class graduated in 1875. Coeducational since September, 1925. The faculty consists of 84 professors and 116 lecturers, instructors, assistants and others, a total of 200. For matriculation, students must be seniors in absentia, who will receive the bachelor degree from their college after having completed successfully at least one year of work in the school of medicine. The course covers four years of nearly nine months each. The total fees for the four years, respectively, are $315, $315, $315 and $320. The total registration for 1931-1932 was 190; graduates, 53. The fifty-ninth session begins Sept. 27, 1932, and ends June 14, 1933. The Dean is Waller S. Leathers, M.D.

TEXAS

Dallas

BAYLOR UNIVERSITY COLLEGE OF MEDICINE, 810 College Avenue.—Organized in 1900 as the University of Dallas Medical Department. In 1903 it took its present name and became the Medical Department of Baylor University. It acquired the charter of Dallas Medical College in 1904. Coeducational since organization. The first class graduated in 1901. The faculty consists of 61 professors and 67 instructors and assistants, a total of 128. Entrance requirements are two years of college work in addition to a four year high school education. The

course is four years of eight months each. The fees for each of the four years, respectively, are $312, $297, $282 and $287. Total registration for 1931-1932 was 356; graduates, 67. The thirty-third session begins Sept. 26, 1932, and ends May 29, 1933. The Dean is W. H. Mousrund, M.D.

Galveston

UNIVERSITY OF TEXAS SCHOOL OF MEDICINE, 912 Avenue B.—Organized in 1891. The first class graduated in 1892. Coeducational since organization. It has a faculty of 42 professors and 24 lecturers and instructors, a total of 66. The curriculum covers four years of eight months each. The entrance requirement is two years of collegiate work in addition to a four-year high school education. The freshman class is limited to 100 students on a scholarship basis; only Texans are accepted. The total fees for the four years, respectively, are $82, $78, $66 and $80. Total registration for 1931-1932 was 328; graduates, 71. The forty-second session begins Oct. 1, 1932, and ends May 31, 1933. The Dean is George E. Bethel, M.D.

UTAH

Salt Lake City

UNIVERSITY OF UTAH SCHOOL OF MEDICINE.—Organized in 1906. Coeducational since organization. Gives only first two years of medical course. Each school year covers thirty-six weeks. Three years of collegiate work is required for admission. The medical faculty consists of 7 professors and 17 lecturers and assistants, a total of 24. The fees are $190 for the first year and $200 for the second year. Total registration for 1931-1932 was 68. The twenty-sixth session begins Sept. 27, 1932, and ends June 3, 1933. The Dean is L. L. Daines, M.D.

VERMONT

Burlington

UNIVERSITY OF VERMONT COLLEGE OF MEDICINE, Pearl Street, College Park.—Organized with complete course in 1822. Classes graduated in 1823 to 1836, inclusive, when the school was suspended. It was reorganized in 1853 and classes were graduated in 1854 and in all subsequent years. Coeducational since 1920. It has a faculty of 30 professors and 39 lecturers, instructors, preceptors and others, a total of 69. Seventy-two hours of college work in addition to a four-year high school education is required for admission. The course of study covers four years of nine months each. For residents of Vermont the tuition fee is $300 each session. Nonresidents are charged an additional $75 each session. A student activity fee of $30 is charged all students not holding academic degrees or in attendance four years previously, and a $25 fee for the Doctor's degree. The total registration for 1931-1932 was 156; graduates, 36. The next session begins Sept. 16, 1932, and ends June 19, 1933. The Dean is J. N. Jenne, M.D.

VIRGINIA

Charlottesville

UNIVERSITY OF VIRGINIA DEPARTMENT OF MEDICINE.—Organized in 1827. Classes were graduated in 1828 and in all subsequent years except 1865. Coeducational since the session 1920-1921. It has a faculty of 31 professors and 38 lecturers, instructors, assistants and others, a total of 69. The requirements for admission are the completion of a four-year high school course, or its equivalent, and two years of college work devoted to English, mathematics, chemistry, physics and biology. For residents of Virginia the total fees for the four years, respectively, are $377.50, $355, $330 and $325. Nonresidents are charged an additional $50 each year. The total registration for 1931-1932 was 241; graduates, 49. The one hundred and ninth session begins Sept. 15, 1932, and ends June 13, 1933. The Dean is J. Carroll Flippin, M. D.

Richmond

MEDICAL COLLEGE OF VIRGINIA, Twelfth and Clay streets.—Organized in 1838 as the Medical Department of Hampden Sydney College. Present title was taken in 1854. In 1913 the University College of Medicine was merged. In 1914 the North Carolina Medical College was merged. Coeducational since 1918. Classes were graduated in 1839 and in all subsequent years. It has a faculty of 60 professors and 80 lecturers, instructors and others, a total of 140. The requirements for admission are a four-year high school education and in addition two years of collegiate work, including courses in physics, chemistry, biology and English. The course covers four years of eight and one-half months each. Total fees for the four years, respectively, are $307, $307, $292 and $322. Nonresidents are charged an additional $100 each year. The total registration for 1931-1932 was 362; graduates, 91. The ninety-fifth session begins Sept. 13, 1932, and ends May 30, 1933. The Dean is Lee E. Sutton, Jr., M.D.

WEST VIRGINIA

Morgantown

WEST VIRGINIA UNIVERSITY SCHOOL OF MEDICINE.—Organized in 1902 and gives only the first two years of the medical course. Coeducational since organization. Sixty-four semester hours of college work is required for admission, and the bachelor's degree will be granted to those who finish the two years in medicine. Session extends through nine months. The faculty numbers 11 professors and 11 lecturers, instructors, assistants and others, a total of 22. Fees: for residents of the state, $115 each year; for nonresidents, $165. The total registration for 1931-1932 was 142. The next session begins Sept. 8, 1932, and ends June 6, 1933. The Dean is John N. Simpson, M.D.

WISCONSIN

Madison

UNIVERSITY OF WISCONSIN MEDICAL SCHOOL, 412 North Charter Street.—Organized in 1907. Gave only first two years of the medical course until 1925, when the clinical years were added. Coeducational since organization. For matriculation, at least two years in a college of arts and science or an equivalent training is required, including one year of Latin, a reading knowledge of French or German, and at least a year's work in physics, chemistry and biology. It has a faculty of 64 professors and 67 lecturers, instructors and others, a total of 131. The fees for each year are, respectively, $150, $82, $60 and $43. An additional fee of $200 is charged for nonresidents. The total registration for 1931-1932 was 318; graduates, 52. The twenty-fifth session begins Sept. 21, 1932, and ends June 19, 1933. The Dean is C. R. Bardeen, M.D.

Milwaukee

MARQUETTE UNIVERSITY SCHOOL OF MEDICINE, 561 North Fifteenth Street.—Organized in December, 1912, by the merger of the Milwaukee Medical College and the Wisconsin College of Physicians and Surgeons. Coeducational since organization. It has a faculty of 165. The entrance requirements are sixty-four semester hours of college work, including courses in physics, chemistry, biology, and a modern foreign language. The curriculum covers four years of eight and a half months each, and one year's internship in an approved hospital. The fees for the four years, respectively, are $389, $379, $379 and $364. The total registration for 1931-1932 was 259; graduates, 61. The twenty-first session begins Sept. 26, 1932, and ends June 7, 1933. The Dean is B. F. McGrath, M.D.

CANADA

Alberta

UNIVERSITY OF ALBERTA FACULTY OF MEDICINE, Edmonton.—Organized in 1913. Coeducational since organization. Has given the complete six-year medical course since 1924. The faculty includes 41 professors and 45 instructors, assistants and others, a total of 86. Fees for first year are $175 and $225 for other five years. The registration for 1931-1932 was 135; graduates, 22. The twentieth session begins Sept. 26, 1932, and ends May 16, 1933. The Dean is Allan Coats Rankin, M.D.

Manitoba

UNIVERSITY OF MANITOBA FACULTY OF MEDICINE, Corner of Emily and Bannatyne Avenue, Winnipeg.—Organized in 1883 as Manitoba Medical College; first class graduated in 1886, and a class graduated each subsequent year. The college transferred all its property to the University of Manitoba in 1919 and assumed the present title. Coeducational since organization. The faculty includes 46 professors, 79 instructors and assistants, a total of 125. The total fees for the five years, respectively, are $261, $251, $261, $261 and $120. Matriculation requirements include two years of college work in the faculty of arts and science of a recognized university subsequent to the complete high school course required for entrance to the latter. The course extends over four years of eight months each and a hospital internship. Total registration for 1931-1932 was 241; graduates, 34. The next session begins Sept. 22, 1932, and ends May 27, 1933. The Dean is A. T. Mathers, M.D.

Nova Scotia

DALHOUSIE UNIVERSITY FACULTY OF MEDICINE, Halifax.—Organized in 1867. Incorporated as the Halifax Medical College in 1875. Reorganized as an examining faculty, separate from the Halifax Medical College, in 1885. In 1911, in accordance with an agreement between the Governors of Dalhousie University and the Corporation of the Halifax Medical College, the work of the latter institution was discontinued and a full teaching faculty was established by the university. By an arrangement between Dalhousie University and the Provincial Medical Board of Nova Scotia, the final professional examinations are conducted conjointly by the university and the board, and candidates may qualify at the same time for their academic degrees and the provincial license. First class graduated in 1872. Coeducational since 1871. It has a faculty of 27 professors and 42 demonstrators, lecturers and others, a total of 69. Requires for matriculation two years of arts and a graded course of four years and a hospital internship of one year. The fees are $277, $277, $282 and $262 for each year, respectively. The total registration in regular classes for 1931-1932 was 142; graduates, 34. The next session begins Sept. 13, 1932, and ends May 16, 1933. The Dean is H. G. Grant, M.D.

Ontario

QUEEN'S UNIVERSITY FACULTY OF MEDICINE, Kingston.—Organized 1854, first class graduated in 1855, and a class graduated each subsequent year. The faculty was originally a department of the university, but a separation took place in 1866, when the school was conducted under the charter of the Royal College of Physicians and Surgeons at Kingston. It admitted women from 1880 until 1883. In 1892 the school again became a part of Queen's University. The faculty numbers 55. The fees for the six years are, respectively, $175.75, $185.75, $185.75, $210.75, $210.75 and $240.75. The last includes the fee of $30 for the M.D., C.M. degrees. The course covers six years of thirty teaching weeks each, the first including courses in physics, chemistry, biology, history, economics or English. The total registration in 1931-1932 was 203; graduates, 48. The next session begins Sept. 29, 1932, and ends May 24, 1933. The Dean is Frederick Etherington, M.D.

UNIVERSITY OF WESTERN ONTARIO MEDICAL SCHOOL, Ottawa Avenue, London.—Organized in 1881 as the Western University Faculty of Medicine; first class graduated in 1883, and a class graduated each subsequent year. Present title in 1923. The medical school has been under the control of the Board of Governors of the University of Western Ontario since 1913. Coeducational since 1913. The faculty numbers 71. Two years of premedical college work, including courses in physics,

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chemistry and biology, is required for admission to a four year medical course—all of which is referred to as a six year medical course. The total fees to residents of Canada for the last four years, respectively, are $200, $200, $208 and $233. The registration for 1931-1932 was 140; graduates, 37. The next session begins Sept. 21, 1932, and ends June 2, 1933. The Dean is A. B. Macallum, M. D.

UNIVERSITY OF TORONTO FACULTY OF MEDICINE, Toronto.—Organized in 1843 as the Medical Faculty of King's College. Abolished in 1853. Reestablished in 1887. In 1902 it absorbed Victoria University, Medical Department, and in 1903 it absorbed the Medical Faculty of Trinity University. Coeducational since 1903. The course of study covers six years of eight months each, the first two being devoted largely to physics, chemistry, biology and cultural courses in history, science and English. It has a faculty of 62 professors and 238 lecturers, associates and others, a total of 300. The fees are $170 for the first year; for the second, $220; $280 for the third year; $220 for the fourth and fifth years, and $243 for the sixth year. The total registration for 1931-1932 was 663; graduates, 135. The next session begins Sept. 27, 1932, and ends May 20, 1933. The Dean is J. G. FitzGerald, M.D.

Quebec

MCGILL UNIVERSITY FACULTY OF MEDICINE, 3640 University Street, Montreal.—Founded 1824 as Montreal Medical Institution; became the Medical Faculty of McGill University in 1829; first class graduated under the university auspices in 1833. No session between 1836-1839, owing to political troubles. In 1905 it absorbed the Faculty of Medicine of the University of Bishop College. Coeducational since 1919. The course consists of three premedical years, and five medical years of eight months each. The faculty consists of 66 professors and 126 lecturers and others, a total of 192. The total fees for each of the five medical years are $267. The total registration for 1931-1932 was 467; graduates, 99. The next session begins Sept. 14, 1932, and ends April 25, 1933. The Dean is Charles F. Martin, M.D.

UNIVERSITY OF MONTREAL FACULTY OF MEDICINE, 1265 St. Denis Street, Montreal.—Organized in 1843, incorporated in 1845 as the Montreal School of Medicine and Surgery. In 1891, by act of Parliament, the Medical Faculty of Laval University (organized in 1878) was absorbed. Present name by act of Parliament in 1920. A class was graduated in 1843 and in each subsequent year. Coeducational since 1925. The faculty numbers 103. The course covers one premedical and five medical years, including a hospital internship. The total fees for each of the five years, respectively, are $240, $220, $262, $232 and $218. The total registration for 1931-1932 was 232; graduates, 35. The next session begins Sept. 15, 1932; and ends June 15, 1933. The Dean is Louis de Lotbiniere Harwood, M.D.

LAVAL UNIVERSITY FACULTY OF MEDICINE, Quebec.—The Quebec School of Medicine, organized in 1848, became in 1852 the Laval University Faculty of Medicine; first class graduated in 1855, and a class graduated each subsequent year. The faculty numbers 88. The fees for each of the medical years are $160, $170, $160, $160 and $180 for residents of Canada. Nonresidents are charged an extra fee of $190 each year. The course covers one premedical year, including preliminary courses in physics, chemistry and biology, and five medical years. Total registration for 1931-1932 was 255; graduates, 51. The next session begins Sept. 13, 1932, and ends May 31, 1933. The Dean is Arthur Rousseau, M.D.

Saskatchewan

UNIVERSITY OF SASKATCHEWAN SCHOOL OF MEDICAL SCIENCES, Saskatoon.—Organized in 1926. Coeducational. Offers the first two years only following a minimum of two years' university work, mainly in physics, chemistry and biology. Students require three more years for graduation, making in all seven years from matriculation. The medical faculty includes 8 professors and 4 lecturers and assistants, a total of 12. The fees are $120 for each year. The total registration for 1931-1932 was 52. The next session begins Sept. 23, 1932, and ends May 12, 1933. The Dean is W. S. Lindsay, M.D.

COLLEGE NEWS

The following current topics regarding medical schools have been reported:

University of California Medical School.—Plans are being prepared for the construction of a new building which will house the activities of the outpatient department of the University of California Hospital. The Christine Breon Fund became available for medical research in the medical school and the Lillie Spreckles Wegeforth Fund for research on respiratory infections.

Yale University School of Medicine Buildings Completed.—The Sarah Way Tompkins Memorial Pavilion of the New Haven Hospital, providing modern ward facilities for surgical cases, opened early in June, 1932.

George Washington University School of Medicine.—During the past year a new four story laboratory building, adjoining the medical school, has been constructed. This building will house the department of bacteriology, hygiene and preventive medicine, animal quarters for experimental work for the entire school, a central diagnostic laboratory for the hospital, a hospital record room, and a teaching laboratory for clinical microscopy. The old medical building is being completely remodeled and all laboratories are being newly equipped for teaching and investigative work. Twelve new full-time men have been added to the teaching staff and the university has increased its appropriation to the medical school in order to promote a program of teaching and research along the most modern lines. In addition, many improvements have been made in the physical plant of the university hospital, adjoining the school of medicine, and plans have been drawn for a new addition to the dispensary and the installation of a new department of radiology.

Indiana University School of Medicine.—The Rotary Convalescent Home has been completed and placed in operation. Anonymous donors gave the well baby clinic, $5,500; oxygen chambers, $7,000; students' loan fund, $4,000; general use, $3,000. The Eli Lilly Fund has also contributed $5,000 for five years for research.

University of Minnesota Medical School.—A new medical science building has been erected to be used primarily for dentistry but also for some medical classes.

St. Louis University School of Medicine.—During the session 1931-1932, notable progress has been made toward the completion of a new unit of the University Hospital, the Firmin Desloge Hospital. Increased teaching facilities have been secured by the opening of a pediatric division at St. Mary's Hospital, the division containing thirty-eight beds, with facilities in the other sections of the hospital for ten or more additional patients. The staff reorganization and the new program for medical administration at Mount St. Rose Sanitarium has been completed and has been functioning successfully during the second semester. The program for developing graduate fellowships has been enlarged, so that during 1931-1932 nine new appointments and six reappointments have been made.

University of Nebraska College of Medicine.—A reserve fund of $1,500 for special research was received and an endowment for the department of pediatrics from the estate of Dr. H. M. McClanahan, former chairman of the department, the present valuation of which is $30,000. A sixty student addition to the present nurses' home is ready for occupancy.

Albany Medical College.—Four fellowships have been established, three through the Littauer Foundation and the other through the Schepp Foundation. An appropriation was received from the Rockefeller Foundation for activities of the Regional Extension Department and from the General Electric Company for special research and other purposes.

Columbia University College of Physicians and Surgeons.—The Institute of Ophthalmology of the Presbyterian Hospital is now in process of construction, with a capacity of 110 beds.

New York Homeopathic Medical College and Flower Hospital.—Gifts amounting to $132,625 have been received from Mr. Eversley Childs, Sr., a trustee, Mrs. Eversley Childs, Sr., Charles Strauss, a trustee, the Flower Hospital Ladies Auxiliary, and the estates of various individuals.

University and Bellevue Hospital Medical College.—Gifts amounting to $205,779.47, principally for research, have been received.

Duke University School of Medicine.—The Nurses' Home was completed in June, 1932.

University of Cincinnati College of Medicine.—A gift of $3,000 was received from Mrs. Christian R. Holmes to prepare and equip the top floor of the Christian R. Holmes Hospital for Ophthalmological Service.

University of Oregon Medical School.—An appropriation for research from the Rockefeller Foundation of $13,000 was received, to cover a two year period.

Jefferson Medical College of Philadelphia.—The Curtis Clinic Building, containing all the outpatient departments, was opened.

Meharry Medical College.—The new plant, including medical school, hospital and nurses' home, was completed in

September, 1931, and the session of 1931-1932 opened in the new buildings, with new equipment.

Vanderbilt University School of Medicine.—An appropriation of $250,000 was made by the Rockefeller Foundation for research over a period of eight years; an appropriation of $50,000 was made by the General Education Board for the purchase of books and periodicals by the medical library to be distributed over a period of four years, and a gift of $3,600 by nieces and nephews of Mr. Leslie Warner of Nashville (plus a similar amount donated by Vanderbilt University), to be known as the Leslie Warner Fund for the Study and Treatment of Cancer, was received.

University of Texas School of Medicine.—The dedication of the John Sealy Hospital Outpatient Department, the Medical Laboratory Building and the Rebecca Sealy Residence for Nurses occurred May 30-31.

Medical College of Virginia.—Gifts amounting to $65,601.81 for the St. Philip Hospital and its school of nursing library, the outpatient department, postgraduate clinic, crippled children's clinic, research in pharmacology and toward the maintenance of the library, were received. A college library is under construction and will be ready for use during the session 1932-1933.

Marquette University School of Medicine.—A new medical building, erected at a cost of $500,000, is ready for occupancy and all activities and classes of the medical school will be resumed in the new building for the session 1932-1933. Opportunities will be offered for graduate study in the basic sciences in correlation with clinical work in the various hospitals of the community. The building will also afford accommodations for some of the basic scientific departments of the dental school.

McGill University Faculty of Medicine.—A gift of $1,232,652 was received from the Rockefeller Foundation for the endowment of a Neurological Institute.

Laval University Faculty of Medicine.—A new amphitheater, new equipment and a new museum have been provided for the department of anatomy. New buildings have been erected for the Institut de Biologie and Institut du Cancer at Quebec.

THE ASSOCIATION OF AMERICAN MEDICAL COLLEGES

The requirements for admission to and graduation from colleges holding membership in the Association of American Medical Colleges, as defined in its By-Laws, are:

1. Satisfactory completion of a minimum of collegiate instruction, as provided below in subsection I, or by

2. Examination, as provided in subsection II.

SUBSECTION I.—The minimum of collegiate instruction required for entrance to medical schools and medical colleges in membership in the association shall be 60 semester hours [1] of work, which shall include the subjects hereinafter specified, in institutions approved by accrediting agencies acceptable to the executive council of the association. Exception may be made under this section in that any member may admit applicants who have fulfilled the requirements in American or foreign institutions not approved by such accrediting agencies, provided that all admissions so made shall be reported to the executive council and shall be published in the next annual report of the council.

All collegiate instruction given in satisfaction of this requirement must be based on the same entrance requirements and must be of the same quality and standard of instruction as that required for a baccalaureate degree in the institution in which the candidate receives his preparation.

The sixty semester hours of collegiate instruction, indicated above, shall include a minimum total number of semester hours in each of certain required subjects and the specified science subjects shall include a minimum number of semester hours of laboratory work as follows:

Requested Subjects	Minimum Total Semester Hours	Minimum Semester Hours of Laboratory Work
1. General chemistry (*a*)	8	4*
Organic chemistry (*b*)	4	0
2. Physics (*c*)	8	3*
3. Biology (*d*)	8	4*
4. English literature and composition (*e*)	6	

* Included in minimum total semester hours.

Explanations as to content in each of these required college subjects together with suggestions to desirable additional study in certain subjects are as follows:

(*a*) *General Chemistry.*—Eight semester hours required, including 4 semester hours of laboratory work. In the interpretation of this rule, work in qualitative analysis may be included as part of general chemistry.[2]

(*b*) *Organic Chemistry.*—A completed course of 4 semester hours required, consisting of didactic exercises, which should cover a discussion of the aliphatic, carbocyclic and heterocyclic series.[3]

(*c*) *Physics.*—Eight semester hours required, of which 2 semester hours shall consist of laboratory work. It is urged that this course be preceded by a course in plane trigonometry.[4]

(*d*) *Biology.*—Eight semester hours required, of which at least 4 semester hours shall consist of laboratory work. This requirement may be satisfied by a course of 8 semester hours in either general biology or zoology, or by courses of 4 semester hours each in zoology and botany, but not by botany alone. Courses in physiology and hygiene, sanitation, entomology, bacteriology, histology and similar subjects covered in the medical curriculum shall not be accepted as part of the premedical college requirement in biology.[5]

Students who present at least 90 semester hours of college work may substitute for the foregoing biologic requirements at least 8 semester hours in the psychologic or sociologic sciences.

(*e*) *English Composition and Literature.*—The usual introductory college course of 6 semester hours or its equivalent is required.

SUBSECTION II.—Admission to medical schools and medical colleges in the association may be granted to candidates on the basis of examinations as hereinafter provided. These examinations shall be conducted by such agencies as may be designated from time to time by the executive council of this association.

(*a*) Candidates who have completed not less than 60 semester hours of collegiate instruction but who lack the full requirements in not more than two of the required subjects may be admitted on successfully passing examination in these subjects as provided above.

A candidate to be examined under this section must give evidence of scholarship of high order.

(*b*) Candidates who have completed not less than 90 semester hours of collegiate instruction, but who lack credit in any or all of the required subjects, may be admitted on successfully passing examinations in these subjects as provided above.

All candidates for the comprehensive examination must present evidence of having accomplished work of distinction in one or more fields of learning.

The standards of instruction shall be as specified in subsection I.

1. A semester hour is the credit value of sixteen weeks' work, consisting of one lecture or recitation period per week, each period to be of not less than fifty minutes' duration net. At least two hours of laboratory work per week shall be necessary to be considered as the equivalent of one lecture or recitation period.

2. It is highly desirable that either the elements of physical chemistry be included in the course in general chemistry or presented as a supplementary course in the elementary physical chemistry.

3. It is recommended that additional work be offered in organic chemistry and that this additional work include a fair proportion of laboratory work.

4. In addition to the required course in general physics it is recommended that colleges provide an elective course suitable for students who desire more knowledge of physics than the general course affords and who expect to apply this knowledge to medicine and biology, rather than to engineering and physics.

5. In all cases the premedical biologic work should emphasize the great generalizations of biology—e. g., the cell doctrine, comparative anatomy and embryology, recapitulation of phylogeny in ontogeny, adaptation to environment. Special attention is called to the value of an elective second year course in general physiology in which a study is made of the application of physics and chemistry to life processes.

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SATURDAY, AUGUST 27, 1932.

MEDICAL EDUCATION, 1932

The survey of medical education presented elsewhere in this issue clearly formulates one of the most serious problems now confronting our profession. Chart 1 shows that the number of medical graduates during the last ten years has steadily increased and that it now exceeds, by 50 per cent, the average annual loss to the profession through death. Moreover, there is a growing tendency for prospective medical students in excess of the numbers which our own schools can accommodate to seek their professional training in Europe or Canada. The number of these expatriated students, so far as reported to us, is this year 63 per cent larger than in 1930-1931. It may reasonably be expected that after graduation these men and women will return to this country to practice, adding several hundred more to the number annually licensed. The United States already has more physicians in proportion to its population than any other country in the world; if this ratio is still further increased, it is evident that an oversupply of doctors threatens, with an inevitable lowering of the standards of the profession. Perhaps there is need for professional birth control.

Seldom does any one assert that the test of fitness to practice, administered by the state licensing boards, is too severe. Yet even by this test the graduates of the majority of the European schools make a poor showing. The analysis of the state board records for five years seems to afford justification for the requirement of an additional period of training in the case of most of these physicians who have been educated abroad.

A powerful incentive to raising the standards of hospitals has been the desire for qualified interns, and hence for the approval of the Council on Medical Education and Hospitals. The result of this activity has been an increase in the number of hospitals approved for intern training, which now have places for 1,325 more men or women than the schools annually turn out. This situation constitutes a hardship for those institutions which are unable to secure adequately trained men or women as interns. However, competition is undoubtedly impelling many hospitals to improve greatly their facilities for intern training. Perhaps a solution of this problem may be found in lengthening the average duration of the internship and the more definite assignment of surgery to the rôle of a specialty.

CUBAN PHYSICIANS REVOLT

Newspapers recently announced that the physicians of Cuba employed by the mutual aid societies had revolted against the terms of their employment and that at the request of the president of Cuba they had agreed to postpone their strike for seventy-two hours. The president is studying the dispute, which is precipitated by a refusal of the societies to drop from their membership lists all persons financially able to pay regular fees for medical attendance.

The situation thus precipitated in Cuba was called to the attention of the House of Delegates of the American Medical Association in 1927 by Dr. J. M. Penichet, professor of ophthalmology in the University of Havana. The conditions of medical practice in Cuba are unusual. The population is slightly over 3,000,000 and there are about 3,000 physicians practicing in the island. This would seem to indicate approximately 1,000 available patients for each physician, whereas actually such is not the case. Some two thirds of the population are affiliated with the Spanish mutual aid societies. About fifty years ago the Spaniards established this form of practice primarily to take care of laborers. For the sum of $2 a month, members of the society are entitled to medical care in case of illness. In addition, the societies have developed clubhouses, schools, libraries, gymnasiums, ballrooms and similar amusements, and in some instances they own banks. Physicians are employed on small salaries to provide medical care. There are approximately twenty of these health societies. One of them has at least 60,000 members and another some 20,000 members. In addition to hospitals they have exceedingly ornate and handsome clubhouses, which constitute a rallying place for their membership. Shortly the plantation owners and other wealthy patrons of these organizations decided to avail themselves of the same privileges as were accorded to the laborers. As a result the private practice of medicine began to fall into desuetude and therewith the medical profession itself began to retrograde. In his address to the American Medical Association in 1927, Professor Penichet pointed out that the mutual aid societies were able to function largely through exploitation of the medical profession. The physicians formed a federation to oppose these powerful trusts and to free the medical profession. Previously to 1927 the profession had revolted twice, and there has been constant conflict since that time.

In a trip recently made to Cuba by Dr. George H. Kress, editor of *California and Western Medicine*, he

verified the status of the situation as related by Professor Penichet. In an account in his publication he pointed out its significance in relationship to conditions in this country. The medical profession of our own country certainly cannot anticipate better treatment or a more favorable consideration in relationship to some of the schemes now being exploited here. Certainly the Cuban medical profession has been but poorly rewarded for some fifty years of trial of such practice in that country. Inevitably, the physician who in times of stress disposes of his medical birthright as a professional man finds himself the drudge of the group that has purchased his scientific freedom. The physicians in Cuba who are the employees of the mutual aid societies work day and night for a pittance and are so constantly driven by the excessive demands on their services that they are unable to give to any patient the individual medical attention necessary to intelligent and satisfactory medical care. The rich patrons under these contracts no doubt demand and receive better service than is rendered to the membership generally. The old psychologic and biologic laws which communistic propagandists would invalidate in reforming medical care go right on working and eventually invalidate the experiments.

TRUSTS OPPOSING ANIMAL EXPERIMENTATION NOT CHARITABLE

Animal experimentation as a means of promoting human and animal welfare has recently received the sanction of two tribunals of great importance, one in the United States and the other in England. Both decisions tend to brighten the outlook for the protection of medical science against the perpetual warfare that threatens it through bequests for the support in perpetuity of organizations opposed to experiments on animals.

In the American case,[1] the United States Board of Tax Appeals held that a bequest to a society organized for "the total abolition of all vivisectional experiments on animals and other experiments of a painful nature" was not a bequest to a corporation organized and operated exclusively for the prevention of cruelty to animals, and that therefore the amount of such a bequest could not be deducted from the principal of an estate in computing the federal estate tax. The decision of the Court of Appeal in the English case [2] raised the question whether, "in the light of later knowledge in regard to the benefits accruing to mankind from vivisection," bequests designed to hinder and prevent vivisection would today be regarded as charitable bequests. On appeal, the House of Lords forbade the use for antivivisection propaganda of any part of the legacy concerning which the question was raised. The English decision is of only persuasive influence in the United States, but the changing view suggested by it with respect to bequests to create trusts to carry on activities against animal experimentation is of vital importance. Unless such trusts can be shown to be "charitable" in character, they cannot be made to operate in perpetuity.

The decision of the U. S. Board of Tax Appeals is printed at length in this issue.[3] It is a remarkable statement of the value of experimentation, all the more cogent because of the dispassionate, nonmedical, judicial source from which it emanated. The executor of the estate against whom the decision was rendered may appeal to the courts for relief, but a decision by an appellate court would almost certainly do nothing more than strengthen the defense of animal experimentation that the decision affords.

The English case arose out of a bequest of the residuary estate of the testatrix, amounting to about £200,000, or nearly $700,000, at the present rate of exchange, for an alleged charitable institution for the service of animals, all the officials of which should be and should always have been declared antivivisectionists. Hospitals and homes for animals were to be established, having no declared vivisectionists in any way connected with their management, and refuges were to be established where animals of all kinds should live free from molestation by man. The heir at law and the next of kin attacked the legality of the bequest. The trial court decided against them, and they appealed to the Court of Appeal. The Court of Appeal concluded, from authorities which it cited, that if a bequest was designed to secure good treatment for animals and to insure humane conduct toward them, whether in connection with vivisection or under other circumstances, it was a charitable bequest. It was charitable, however, not because it afforded protection to animals but because it stimulated humane and generous sentiments in man toward the lower animals and thus promoted feelings of humanity and morality generally, repressed cruelty, and elevated the human race. But because the proposed refuges for animals were to protect their occupants only from molestation and destruction by man and to leave every member of the brute creation within the so-called refuges to be the prey of every other creature, the purpose of the bequest seemed to the court to offer no protection from cruelty to animals generally and to denote no elevating lesson to mankind. The order of the court below, declaring the trust proposed by the will to be a valid trust, was therefore reversed.

Lord Justice Russel concurred in the decision of the court but filed a separate opinion in which he said:

> So far as I know there is no decision which upholds a trust in perpetuity in favor of animals upon any other ground than this, that the execution of the trust in the manner defined by the creator of the trust must produce some benefit to mankind. . . .

1. Pennsylvania Company for Insurance on Lives and Granting of Annuities, Executor of the Estate of A. Sidney Logan, deceased, petitioner v. Commissioner of Internal Revenue, respondent, 25 B. T. A. —.

2. In re Grove-Grady; In re Plowden v. Lawrence, 98 L. J., Ch. 261; (1929) 1 Ch. 557, the Law Journal 71: 329 (May 9) 1931.

3. Taxing Antivivisection Bequests, this issue, p. 782.

The cases have accordingly run to fine distinctions, and speaking for myself I doubt whether some dispositions in favor of animals held to be charitable under former decisions would be held charitable today. For instance, antivivisection societies, which were held to be charities by Chitty J. In re Foveaux (1895, 2 Ch. 501, 507), and were described by him as near the borderline, might possibly in the light of later knowledge in regard to the benefits accruing to mankind from vivisection be held not to be charities.

If the criterion by which the character of trusts is to be determined, in order to ascertain whether they are or are not charitable trusts, is the benefit that mankind will derive from them, it is difficult to see on what basis trusts for the hindrance or prevention of animal experimentation can be adjudged charitable. Certainly the weight of the evidence proves that animal experimentation is of benefit to mankind—and to animals, too, for that matter. If animal experimentation is for the benefit of mankind and of animals, bequests to hinder or prevent such experimentation obviously cannot be for the benefit of mankind, and bequests to accomplish that end cannot be charitable bequests. It may be argued that such reasoning is begging the question; that it assumes that the benefits that have been and are being derived from animal experimentation are at best not sufficient to offset the alleged cruelty of such experimentation. The answer is that there is no cruelty associated with animal experimentation that is not within the reach of the ordinary laws for the prevention of cruelty to animals. The fact that prosecutions for cruelty in connection with animal experimentation are practically unheard of, despite the vigilance of antivivisectionists, is evidence of the absence of such cruelty. The trouble with the antivivisectionists' reasoning lies in the fact that they fail to distinguish between pain and cruelty and set up their own standards of cruelty, which are not the standards of the law nor standards of the community.

From the decision of the Court of Appeal, an appeal was taken to the House of Lords. Apparently before a decision was reached there the contending parties had arrived at a compromise. The House of Lords therefore authorized the payment of £25,000, about $87,000, out of the residuary estate, to provide, in a manner approved by the proper court, for establishing and assisting homes or hospitals for animals, but on condition that no part of that sum should be available for antivivisection propaganda.

Probably these two decisions represent the general trend of mature and cultured thought on the subject of animal experimentation, when uninfluenced by lurid appeals to the imagination and by appeals to self interest. Both decisions were based on the orderly presentation of legal evidence, not on such clamorous, virulent, emotional speech-making as commonly fills the air when animal experimentation is discussed before legislative committees. If such committees would limit the presentation of evidence in the same way that it is limited by the courts, their decisions could be relied on to be as sound as the recent decisions of the U. S. Board of Tax Appeals and the English House of Lords and Court of Appeal. Doubtless, however, in the United States at least, the political aspects of hearings before legislative committees and the absence of well defined rules of evidence and procedure will continue too often to render orderly judgment impossible.

Current Comment

PREPAREDNESS FOR IMMUNIZATION

In most instances, oral administration of killed B. typhosus or of its lytic products fails to lead to the development of antibodies so far as can be determined. Nevertheless, Ruge [1] of the University of Kiel asserts that such oral vaccines are far from being ineffective. He claims that they lead to the development of a specific preparedness of the tissues, which is manifested by a more rapid and much more abundant production of antibodies on subsequent subcutaneous injection with the same vaccine. This specific preparedness, he believes, is in itself sufficient to insure relative personal safety under ordinary conditions of exposure. His data suggest a new technic for the clinical estimation of specific resistance, with numerous collateral applications in the study of allergy and of reciprocal bacterial relationships.

EXPERIMENTAL EVOLUTION OF BACTERIA

Many important advances in clinical medicine have followed the introduction of new or simplified laboratory technics, particularly such as yield dependable data in the hands of the average laboratory technician. A recently introduced method of this type, which may modify current conceptions of immunity, is the serial plating method of Hauduroy.[1] In a typical application of this method, Ryan and Arnold [2] of the University of Illinois were able to report the experimental evolution of certain "granules" in apparently sterile body fluids which passed through two or three intermediary stages to their final "transformation" into conventional bacteria or yeasts. The new serial plating method consists essentially in spreading an apparently sterile body fluid on the surface of nutrient agar or other solid culture medium. The "spread" is incubated two or three days, at the end of which time it shows no detectable microbic growth. Each "spread" is now "mopped up" with a small volume of nutrient broth and replanted on a fresh agar surface, the transplantations being repeated, if necessary, a dozen times. In the University of Illinois studies of apparently sterile stomach or duodenal smears after feeding Bacillus prodigiosus, the first demonstrable growth was not noted till the fifth serial transplant. The regenerated B. prodigiosus on this fifth plate appeared as a fusiform bacillus, "spindle-shaped rods with very slender tapering ends." Later transplants gave colonies with "an internal arrangement

1. Ruge, H.: Zentralbl. f. Bakt. **124**: 276 (May) 1932.
1. Hauduroy, P.: Compt. rend. Soc. de biol. **97**: 1392, 1927.
2. Ryan, V., and Arnold, L.: Proc. Soc. Exper. Biol. & Med. **29**: 899 (April) 1932.

suggesting a tangled mass of threads." Faint pigment production was noted on the tenth serial plate. By the twelfth plate, B. prodigiosus had completed its ancestral evolutionary transformation into its usual present-day test-tube morphology. Somewhat similar primordeal fusiform and intermediary filamentous forms were noted in the ontogenic regeneration of yeasts. The fact that viable bacterial detritus can be demonstrated by the Hauduroy technic in otherwise sterile tissues, exudates and body fluids will probably produce much less certainty in diagnoses of "sterile abscesses," "aseptic inflammations" and local "allergic diseases."

Association News

MEDICAL BROADCAST FOR THE WEEK

American Medical Association Health Talks

The American Medical Association broadcasts on Monday and Wednesday from 10:45 to 10:50 a. m. over Station WBBM (770 kilocycles, or 389.4 meters). The Columbia chain program has been discontinued for the present.

The subjects for the week are as follows:

August 29. The Old Oaken Bucket.
August 31. The Father of Medicine.

There will be no broadcast, September 3, of the fifteen minute talk usually scheduled for Saturday morning at 10:45.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Society News.—At a meeting of the Alameda County Medical Association in Oakland, August 15, the speakers were Drs. George F. Calvin, Oakland, on "Rôle of Endocrines in Uterine Hemorrhage"; William A. Clark, "Treatment of Uterine Displacement," and Edward N. Ewer, "Pelvic Inflammatory Diseases." J. F. Math, D.D.S., speaking for the dental profession, and Dr. Daniel Crosby, for the medical profession, gave a report of activities on modified cost in practice.——A Community Nursing Council was recently organized for Alameda County. Dr. Daniel Crosby, Oakland, is chairman.

Licenses Revoked.—At a meeting of the state board of medical examiners in San Francisco, July 14, the license to practice medicine of Dr. Carlos Hidalgo y Teran was revoked. Dr. Teran is now confined in the state narcotic hospital at Spadra, it is reported. The revocation of the license of Dr. Theodore H. Niemann, formerly of Los Angeles, at this meeting was based on narcotic derelictions. The board also revoked the license of Dr. Charles Bee Alexander, Alhambra; this action was based on his conviction of violation of the banking laws of the state of Washington. Dr. Alexander is now confined in the state penitentiary at Walla Walla, it is reported, having been sentenced, May 25, to "hard labor for the period of not less than one year and not more than fifteen years." Narcotic derelictions also caused the revocation of the license of Dr. John Theodore Kergan, Oakland, who is said to be an inmate of the state hospital at Spadra.

ILLINOIS

Personal.—Dr. and Mrs. Eli V. Rice, Polo, celebrated the golden anniversary of their wedding, August 8.——Dr. Samuel Reed Ward, Richmond, celebrated his ninetieth birthday, August 7, with a family reunion at Lauderdale Lake, near Elkhorn, Wis.

Chicago

Changes at University Medical Schools.—The following changes in the Division of Biological Sciences, University of Chicago and Rush Medical College, among others, are noted in the *University Record:*

APPOINTMENTS

Dr. Herbert E. Chamberlain, associate professor of psychiatry, department of pediatrics.
Dr. Oran J. Cutler, assistant professor, department of pathology.
Dr. Paul Oliver, assistant clinical professor, department of surgery, Rush Medical College.
Dr. Samuel Soskin, assistant professor, department of physiology.
Dr. David C. Straus, assistant clinical professor, department of surgery, Rush Medical College.
Dr. John M. Welch, assistant clinical professor of military medicine, department of medicine, Rush Medical College.
Dr. Agnes Beulah Cushman, clinical instructor, department of ophthalmology, Rush Medical College.
Dr. George Ormiston, instructor, department of pediatrics.
Dr. Gilbert Rich, clinical instructor in psychiatry, department of medicine, Rush Medical College.
Dr. Charles A. Sima, clinical instructor, department of medicine, Rush Medical College.

PROMOTIONS

Dr. Paul R. Cannon, to a professorship, department of pathology.
Dr. George M. Curtis, to a professorship, department of surgery.
Dr. Theodore Ticken, to a professorship emeritus, department of medicine, Rush Medical College.
Dr. George G. Davis, to an associate clinical professorship, department of surgery, Rush Medical College.
Dr. George E. Miller, to an associate clinical professorship (materia medica and toxicology), department of medicine, Rush Medical College.
Dr. James H. Mitchell, to an associate clinical professorship, department of dermatology, Rush Medical College.
Dr. Roger Throop Vaughan, to an associate clinical professorship, department of surgery, Rush Medical College.
Dr. Carl Philip Bauer, to an assistant clinical professorship, department of obstetrics and gynecology, Rush Medical College.
Dr. Morris Braude, to an assistant clinical professorship (psychiatry), department of medicine, Rush Medical College.
Dr. Douglas G. Campbell, to an assistant clinical professorship of psychiatry, department of medicine.
Dr. John A. Larson, to an assistant clinical professorship (psychiatry), department of medicine, Rush Medical College.
Dr. Richard R. Richter, to an assistant clinical professorship (neurology), department of medicine, Rush Medical College.
Dr. David B. Rotman, to an assistant clinical professorship (psychiatry), department of medicine, Rush Medical College.
Dr. George F. Dick, to chairmanship of department of medicine, Rush Medical College.
Dr. William F. Moncreiff, to chairmanship, department of ophthalmology, Rush Medical College.

RESIGNATIONS

Dr. Ludvig Hektoen as head of the department of pathology. He will continue as professor of pathology.
Dr. Earl B. Ritchie, as assistant professor of dermatology, department of medicine.

INDIANA

State Medical Meeting at Michigan City.—The Indiana State Medical Association will hold its eighty-third annual session at Michigan City, September 27-29, under the presidency of Dr. Franklin S. Crockett, La Fayette. Scientific sessions will begin Wednesday morning, September 28, with three sectional meetings at which courses of instruction will be given in "Mechanical Methods of Diagnosis," "Emergency Minor Surgery" and "Common Diseases of the Eye, Ear, Nose and Throat." Sections will also meet Thursday morning. Wednesday afternoon there will be a general scientific meeting and Thursday afternoon will be devoted to a general session on medical economics. Among speakers at the latter meeting will be Drs. Charles B. Wright, Minneapolis, on hospitalization of veterans and William C. Woodward, Chicago, director, Bureau of Legal Medicine and Legislation, American Medical Association, on "Legislation Before Congress of Interest to the Medical Profession." At the annual banquet, Thursday evening, Dr. Dean Lewis, Baltimore, president-elect of the American Medical Association, will give an address on "Changing Times in Medicine." A golf tournament will be held at the Long Beach Country Club Tuesday afternoon and the annual smoker will be held in the evening. The annual state health officers' conference will be held during this meeting, September 26-27.

IOWA

Annual Surgical Clinics.—Members of the faculty of the College of Medicine, State University of Iowa, Iowa City, will present the annual surgical survey course for physicians, arranged by the extension department, September 6-9. Tuesday will be devoted to gynecology under Dr. Everett D. Plass and his staff and to genito-urinary surgery under Dr. Nathaniel G. Alcock and his staff. Wednesday Dr. Dean M. Lierle and his staff will give instruction in otolaryngology and four surgeons in general surgery: Drs. Howard L. Beye, Frank R. Peterson, William H. Gibbon and Olan R. Hyndman. Thursday general surgery will be covered by Drs. Hyndman, Beye,

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Glenn C. Blome, George H. Hansmann, Douglas H. Brown and Clark N. Cooper. Friday Drs. Peterson, Hansmann and Harold D. Kerr will lecture on general surgery and Dr. Jacob Kulowski and his staff will present a series on orthopedic surgery.

KENTUCKY

Changes Among Health Officers.—Appointments of new health officers have recently been made in several counties. Dr. Ollie M. Goodloe, Louisville, succeeds Dr. Sam R. Page in Breathitt County. Dr. Gradie R. Roundtree, Horse Cave, has been appointed in Adair County, and Dr. Charles Fred Blankenship, Hawesville, in Hancock County. Dr. Carl N. Gambill, Salyersville, is to succeed Dr. Miriam Marting, health officer of Greenup County, who recently resigned. Dr. Ernest M. Ewers, Somerset, has resigned in Pulaski County.

Society News.—The Sixth Councilor District Medical Society met in Lebanon, August 11. Among the speakers were Drs. Emmet F. Horine and Morris M. Weiss, Louisville, on "Congestive Heart Failure"; Curran Pope, Louisville, fever treatment, and Caswell C. Turner, Glasgow, roentgen diagnosis of pulmonary tuberculosis.——Dr. Amplias O. Sisk, Lexington, addressed the Bourbon County Medical Society, Paris, July 21, on tetanus and Dr. Charles G. Daugherty, treatment of typhoid. ——Drs. Francis M. Massie and Donnan B. Harding, Lexington, addressed the Mason County Medical Association, at Maysville, August 10, on intestinal obstruction and roentgen diagnosis of gallbladder disease, respectively.

MARYLAND

Bone and Radiological Conference.—The Surgical Pathological Laboratory of Johns Hopkins Hospital, Baltimore, announces its annual conference on bone lesions and radiologic aspects of tumor diagnosis, to be held, September 19-24, under the direction of Drs. Joseph C. Bloodgood and Charles Geschickter. The first day of the conference will be devoted to work of interest to oral surgeons and others interested in the jaws, teeth and oral cavity. Tuesday there will be conferences on tumors of the jaw and giant cell tumors and Ewing's sarcoma. The main bone demonstration will occupy the last three days.

Typhoid on Freighter.—An outbreak of typhoid among the crew of the British steamship *Victoria City* was under investigation, August 6, by the Maryland State Department of Health, the New York *Sun* reported. Nine members of the crew were in University Hospital in Baltimore under treatment for typhoid, and two other sick seamen remained aboard the boat docked at quarantine station, Curtis Bay. When the most seriously ill of the crew was first taken to the hospital, the quarantine physician diagnosed the disease as typhoid. This diagnosis was confirmed at the hospital. The freighter left Nikoliadoff, Russia, July 7, took on water at Alexandria, Egypt, and stopped at Constanta, Rumania, before proceeding to Baltimore, the newspaper stated.

MICHIGAN

Seniors Win at Golf.—The Seniors, a group of Detroit physicians who have been in practice for twenty-five years or more, defeated the Noon Day Study Club, composed of doctors under the age of 40, in their first annual golf match at Meadowbrook, August 3. The match play ended in 28½ points in favor of the Seniors to the 22½ points for the Juniors. Seventeen matches were played. An additional fifteen Seniors arrived at the club but found no opponents among the Juniors.

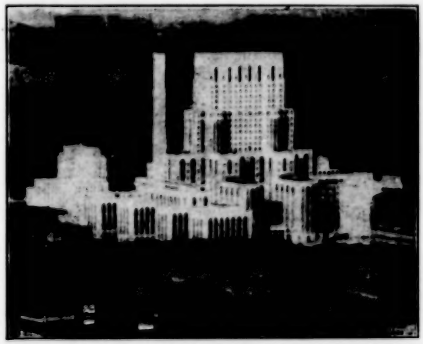
Personal.—Dr. Carl E. Badgley, Detroit, has been appointed assistant professor of surgery in the University of Michigan Medical School, Ann Arbor, succeeding Dr. Vernon L. Hart, who will be associated with the Dayton Clinic, Dayton, Ohio, October 1. Dr. Badgley, who had been associated with the university since 1919, resigned in 1929 to head the division of orthopedic surgery at Henry Ford Hospital. His appointment is effective, October 1.——Dr. Floyd J. Barkman, Calumet, has received the Order of the Purple Heart, for military merit during the World War.——Dr. Burt R. Shurly, Detroit, has been cited to receive the Order of the Purple Heart. The honor was ordered conferred for Dr. Shurly's service in the American Expeditionary Forces at base hospital number 36. ——Dr. Eugene N. Nesbitt, Grand Rapids, has been appointed director of city welfare; he will continue his duties as superintendent of the city tuberculosis hospital.——Dr. Jay M. Burgess, Detroit, has been appointed coroner of Wayne County to succeed his brother, the late Dr. James E. Burgess.

NEW YORK

Ordinance Against Fireworks.—Stimulated by an unusually high percentage of casualties from fireworks on the Fourth of July, the Common Council of Syracuse passed an ordinance, July 19, forbidding all display of fireworks except municipal displays under police supervision. The council was supported in its action by the Onondaga County Medical Society, the Syracuse Academy of Medicine, the Syracuse Eye, Ear, Nose and Throat Club and numerous civic organizations. The ordinance, which makes the use of fireworks punishable by a fine of not more than $150 or 150 days in jail, was passed without a dissenting vote. An amendment gives local dealers, who opposed the measure vigorously, until June 15, 1933, to dispose of their stocks.

New York City

New York Hospital-Cornell Medical Center to Open September 1.—The colossal plant of the New York Hospital-Cornell Medical College Association, which covers an area of three square blocks between Sixty-Eighth and Seventy-First streets overlooking the East River, will go into operation, September 1. The new medical center, which has been under construction since the fall of 1929, will consolidate three of New York's oldest hospitals and the Cornell University Medical College, making possible close coordination of university and hospital training for medical students. Dominating the closely connected buildings rises the central tower of the general hospital, twenty-seven stories high, opening on Sixty-Eighth Street. On the east along the river are three special hospitals One is the Women's Hospital, the successor of the



old Lying-In Hospital and Manhattan Maternity Hospital. The second is a children's hospital and the third a psychiatric hospital, for which the late Payne Whitney made provision in his will. On the west of the main hospital building, along York Avenue, are the buildings of Cornell University Medical College. North of the hospital group are the nurses' residence and a building containing the power plant, service building, laundry, parking garage and, in the tower, an employees' dormitory. Accommodations are thus provided for 1,000 bed patients and approximately the same number of outpatients, 125 resident physicians, 500 nurses and 200 employees. Instruction will be provided for about 300 undergraduate medical students and for many advanced students. The main hospital is described as three buildings superimposed one on another. The general hospital forms the base of the structure, with two southern wings employed for the medical and surgical wards and two on the north side for the outpatient service and facilities for various types of treatment. Nineteen operating rooms fill the tenth and eleventh floors, separating the general from the private hospital. Above the private hospital are the living quarters for the resident staff. New York Hospital, the oldest in New York City and second oldest in the United States, was formally opened in 1791 and was recognized as one of the foremost schools of medicine and surgery. Students of Kings College were first to use its facilities; those of the College of Physicians and Surgeons were instructed there from 1807 to 1869. From 1866 to 1869 the medical college of New York University was housed in the hospital. Since 1912, through funds given by the late George F. Baker, it has been affiliated with Cornell. The legacies of the late Payne Whitney in 1927

opened the way for its recent advances. The first building of the hospital, occupied for nearly a century, was on Broadway near Duane Street. In 1877 it moved to West Sixteenth Street near Fifth Avenue, from which it has moved to the new site. The hospital staff is now organized in five divisions: medicine, surgery, gynecology and obstetrics, pediatrics and psychiatry. All medical teaching that has to do directly with treatment of patients will be conducted by members of the staff, who will also hold appointments in the medical school faculty. Departmental chiefs will be on a full-time basis, though numerically the major portion of the staff will be composed of physicians also engaged in private practice. The New York Hospital-Cornell University project has been completed under the direction of a joint administrative board, of which the chairman is Edward W. Sheldon and the members are Frank L. Polk, William Woodward, Dr. Livingston Farrand, J. Du Pratt White, Dr. Walter L. Niles and J. Pierpont Morgan. Dr. G. Canby Robinson is the executive officer in charge.

PENNSYLVANIA

Society News.—Drs. Ferd E. Weddigen, Williamsport, and Thomas McKean Downs, Philadelphia, addressed the Lycoming County Medical Society in July on "The Friedman Modification of the Aschheim-Zondek Test for Early Pregnancy" and "Tannic Acid Treatment of Burns," respectively.——The Westmoreland County Medical Society held its annual welfare meeting at the Torrance State Hospital, August 23. Dr. Cornelius C. Wholey, Pittsburgh, reported a case of multiple personality, with motion pictures; Drs. Josephine Funderburgh and Theodore Wollak of the hospital staff discussed treatment of dementia paralytica with malaria and complications of arsenical medication, respectively.

Philadelphia

Appointments at Temple.—New appointments to the faculty of Temple University School of Medicine recently announced by Dr. William N. Parkinson, dean, include:

Dr. Ralph M. Tyson, professor of pediatrics.
Drs. William Henry Crawford, Edward D. Atlee and James Edward Bowman, instructors in pediatrics.
Dr. Henry H. Perlman, demonstrator in pediatrics.
Drs. Scott P. Verrei, Joseph Levitsky, Robert S. Heffner and Paul B. Bender, clinical assistants in pediatrics.
Dr. Nicholas Gotten, lecturer in neurosurgery.
Hugo Roesler, Ph.D., has been promoted to the rank of associate professor of radiology.

RHODE ISLAND

State Psychiatrist Appointed.—Dr. George M. Lott, Denver, formerly connected with the Institute of Child Guidance, New York, has been appointed psychiatrist to state institutions of Rhode Island, a full time position created by the last general assembly, according to newspaper reports. Dr. Lott will begin work, September 1, as psychiatrist to the state penal institutions and chief of staff of the psychiatric clinic serving the probation department and the children's bureau. He may also be called on by the attorney general to examine criminals. Dr. Lott is a graduate of the University of Colorado, class of 1928, and has served on the staff of the Boston Psychopathic Hospital and the Cornell Clinic in New York, in addition to the Institute for Child Guidance. Psychiatric work had previously been performed by Dr. John E. Donley, Providence, on a part time basis.

SOUTH CAROLINA

Society News.—At a meeting of the Pickens County Medical Society at the home of Dr. John L. Valley, Pickens, July 6, Dr. James R. Young, Anderson, president of the South Carolina Medical Association, discussed the problem of accidents with relation to hospitals, and Drs. Edgar A. Hines, Seneca, Thaddeus B. Reeves, Greenville, and Howard Anthony, Anderson, government hospitalization of veterans. Dr. Ernest W. Carpenter, Greenville, discussed arthritis and Dr. William A. Sheldon, Liberty, presented a case of tumor of the right hypochondrium.——Dr. William R. Barron, Columbia, addressed the Ridge Medical Society, Edgefield, recently, on surgery of the prostate.

UTAH

License Revocations.—Dr. George W. Baker, Ogden, who appealed to the state supreme court from an order issued by the state department of registration in October, 1931, revoking his license to practice, surrendered the license, July 29, after his case had been referred to the district court. The original order of revocation thereupon became effective. He was charged with performing an abortion. The license of Ben E. Mason, a chiropractor, was revoked in April on a charge of professing publicly to treat human ailments under a system or school of treatment or practice other than that for which he was licensed.

WISCONSIN

State Medical Meeting at Milwaukee.—The ninety-first annual meeting of the State Medical Society of Wisconsin will be held in Milwaukee, September 14-16, with headquarters at the Schroeder Hotel. Dr. George W. Crile, Cleveland, will give the annual oration in surgery, on "Denervation of the Adrenal Glands"; Dr. David P. Barr, St. Louis, will give the oration in medicine, on "The Parathyroid Glands and Their Relation to Calcium Metabolism." At the annual dinner, Thursday evening, September 15, Richard E. Scammon, Ph.D., Minneapolis, will be the speaker, on "The Foundation and Early History of St. Bartholomew's—the First Hospital in London." Guest speakers who will take part in the program include:

Dr. Max Cutler, Chicago, on "Clinical and Pathological Aspects of the Cancer Problem."
Dr. Udo J. Wile, Ann Arbor, Mich., "Occult Syphilis: A Neglected Factor in Diagnosis and Treatment."
Dr. Elexious T. Bell, Minneapolis, "Etiology and Pathology of Nephritis."
Dr. William W. Duke, Kansas City, "Dawn of a New Specialty in Medicine: Allergy."
Dr. Samuel Amberg, Rochester, Minn., "Observations on Some Abdominal Conditions in Childhood."
Dr. John W. Towey, Powers, Mich., "The Effect on the Lungs of Fungus Spores Found in Maple Bark."
Dr. Charles H. Watkins, Rochester, Minn., "Leukopenia and Acute Leukemias with the Differential Diagnosis from Similar Blood Conditions."
Dr. Elsworth S. Smith, St. Louis, "Treatment of Heart Disease."
Dr. Julius Bauer, Vienna, Austria, "Constitutional Factors in Disease."

The annual golf tournament will be held at the Tripoli Country Club, Tuesday, September 13. Clinics and demonstrations will be held in ten Milwaukee hospitals, Wednesday morning.

GENERAL

New Pediatric Journal.—Two issues have appeared of the new organ of the American Academy of Pediatrics, called the *Journal of Pediatrics*. Drs. Borden S. Veeder and Hugh McCulloch, St. Louis, are editors. The journal contains original articles, book reviews, editorials and the proceedings of the recent meeting of the academy.

Society News.—Officers elected at the meeting of the Pacific Coast Oto-Ophthalmological Society in Seattle, June 30-July 2, were Drs. Hans Barkan, San Francisco, president; Bertram C. Davies, Los Angeles, and Leo B. Bouvy, La Grande, Ore., vice president, and J. Frank Friesen, Los Angeles, secretary.——The Association of Military Surgeons of the United States recently presented to the Association of Military Surgeons of Mexico a bronze plaque as a token of friendship and good will. In recognition of the Washington bicentennial year, the plaque bears a profile of Washington. Lieut. Col. William Lee Hart and Col. Percy M. Ashburn, Medical Corps, U. S. Army, made the presentation at a session of the Mexican society in Mexico City, May 30.——National Pharmacy Week will be observed, October 10-15.

Deaths in 1930.—There were 1,343,356 deaths reported in the United States death registration area in 1930, with a rate of 1,133.1 per hundred thousand of population, according to statistics just made public by the U. S. Department of Commerce. Deaths and rate for 1929 were 1,386,363 and 1,191.9, respectively. The decrease was caused almost entirely by a reduction in the number of deaths from influenza from 64,853 in 1929 to 23,066 in 1930 and in those from pneumonia from 106,597 to 98,657. Whooping cough and diphtheria also decreased about 2,000 deaths each. Diseases of the heart and cancer showed the only significant increases. Heart diseases caused 253,084 deaths in 1930, compared with 245,244 in 1929, and the respective rates were 213.5 and 210.8 per hundred thousand. Deaths from cancer and other malignant diseases increased from 111,569 in 1929 to 115,265 in 1930 and the rate from 95.9 to 97.2. There were 29,080 deaths from automobile accidents exclusive of collisions with railroad trains (1,760) and street cars (463).

Milk-Borne Epidemic Diseases.—Nineteen state health officers reported thirty-seven milk-borne epidemics in the United States during 1931, according to the *Child Health Bulletin*. In this total, 1,383 cases and 22 deaths were involved. The diseases believed to have been spread by milk were bacillary dysentery, diphtheria, diarrhea, food poisoning, gastro-enteritis, paratyphoid, poliomyelitis, scarlet fever, septic sore throat, typhoid fever and undulant fever. Typhoid was the cause of eighteen of the thirty-seven epidemics. Septic sore throat, with nine outbreaks, was second. These two diseases were responsible for 73 per cent of the epidemics, 1,168, or 84 per cent, of the cases and 22, or 100 per cent, of the deaths. They occupied a similar position continuously in the last eight years.

the report said, accounting for 76 per cent of the 339 epidemics recorded in that time, 10,863, or 78 per cent, of the 14,266 cases and 424, or 94 per cent, of the 449 deaths. In Canada, four health officers reported four epidemics, involving 582 cases and 6 deaths during 1931. Paratyphoid B, scarlet fever and typhoid were the diseases included. One epidemic of paratyphoid B of 457 cases with 3 deaths was reported.

American Roentgen Ray Society.—The thirty-third annual meeting of the American Roentgen Ray Society will be held at the Book-Cadillac Hotel, Detroit, September 27-30. A consideration of pathology of the joints will occupy the first session. Wednesday morning will be devoted to a discussion of tuberculosis with special attention to its public health, diagnostic and therapeutic aspects, and the afternoon to uses of roentgenology in gynecology and obstetrics. Miscellaneous subjects will be considered, Thursday morning; the afternoon will be devoted to the question of roentgen and radium therapy. Speakers on the program will include Drs. Edwin A. Merritt, Washington, D. C., "Irradiation of the Parathyroids in Cystic Disease of the Bones"; Ralph S. Bromer, Philadelphia, "Osteogenesis Imperfecta"; Robert C. Moehlig, Detroit, "Pituitary Function as Related to Certain Conditions of the Uterus"; Henry J. Walton, Baltimore, "Roentgen Study as an Aid in Obstetrics," and Byrl R. Kirklin, Rochester, Minn., "Hypertrophy of the Pyloric Muscle and Duodenitis: Their Association and Roentgenologic Manifestations." Dr. Augustus W. Crane, Kalamazoo, will deliver the Caldwell Lecture, Wednesday evening.

PHILIPPINE ISLANDS

Society News.—The Manila Medical Society commemorated the fiftieth anniversary of the discovery of the tubercle bacillus with a special meeting, June 6, at which addresses were made, among others, by Drs. Carl M. Hasselmann, on "Robert Koch and His Work," and Antonio G. Sison, "Diagnosis of Pulmonary Tuberculosis."——Affiliation of the Occidental Negros Medical Association with the Philippine Islands Medical Association has recently been approved by the association council. Dr. Jose C. Locsin, Silay, is president.——Child Health Day was observed, June 19, by special designation of Governor General Roosevelt.

Medical School Celebrates Silver Jubilee.—The College of Medicine, University of the Philippines, observed the twenty-fifth anniversary of its founding with a banquet and special program at the School of Hygiene and Public Health, Manila, June 10. Dr. Jose Albert, chief of clinics, Philippine General Hospital, spoke on "Past and Future Achievements of the College of Medicine"; Dr. Sixto y Orosa, director, Bacolod Provincial Hospital, "Problems and Responsibilities of the Medical Profession," and Dr. Federico Delena, "The Present Medical Curriculum as Seen by a Young Graduate." Dr. Sixto de los Angeles, acting dean of the college, and Rafael Palma, LL.D., president of the university, also made addresses.

CANADA

University News.—The University of Alberta Faculty of Medicine conducted a five days' clinical course for physicians of the province at the University Hospital in May. It is expected that the course, the first of its kind at the university, will be continued and extended.

Personal.—Dr. Herbert S. Birkett, emeritus professor of otolaryngology, McGill University, was the guest of honor at a dinner given by his colleagues at the end of the school year. Dr. Birkett was graduated from McGill in 1886 and in 1887 began his association with the university as a demonstrator in anatomy. In 1894 he was made professor of laryngology and in 1906, professor of otolaryngology. During the World War he was in command of No. 3 Canadian General Hospital (McGill).——Dr. McGillivray S. Fraser, Winnipeg, chief health inspector of Manitoba for sixteen years, has retired from active service, having reached the age limit.

Institute for Study of Animal Parasites.—With the cooperation of the government of Quebec, the National Research Council and the Empire Marketing Board, an Institute of Animal Parasitology has recently been established at Macdonald College, McGill University, Montreal. Thomas Wright Moir Cameron, Ph.D., lecturer in helminthology at Edinburgh University, Scotland, has been chosen as director of the institute and research professor of animal parasitology, and Raymond L. Conklin, M.Sc., assistant professor of animal parasitology at McGill, will be associated with him in the development of the work. A new three story building with laboratory accommodations for a number of workers has been built for the institute.

Society News.—Dr. George A. B. Addy, St. John, N. B., was chosen president-elect of the Canadian Medical Association and Dr. Alexander Primrose, Toronto, became president at the annual meeting in Toronto in June. The next meeting will be held in St. John, June 19-23, 1933.——Dr. Charles C. Macklin, London, Ont., recently addressed the Ontario Laennec Society at Toronto, on "The Dynamic Bronchial Tree."——The annual meeting of the Alberta Medical Association will be held in Edmonton, September 20-22, under the presidency of Dr. Thomas W. E. Henry, Fort Saskatchewan.——Dr. Walter S. Turnbull, Vancouver, was made president-elect of the British Columbia Medical Association and Dr. William J. Knox, Kelowna, became president at the recent annual meeting.——The Manitoba Medical Association will hold its annual meeting in Winnipeg, September 8-10.——The first Empire Dental Convention was held in Toronto, August 8-12, when the British, Canadian and Ontario dental associations held joint sessions.

FOREIGN

Congress on Otorhinolaryngology.—At the Second International Congress on Otorhinolaryngology, which is to be held in Madrid, September 27-30, the subjects to be discussed are otosclerosis, ozena, scleroma, bronchoscopy and esophagoscopy, and treatment of malignant tumors by radium and roentgen rays. Among those who will participate in the program will be Drs. John Gordon Wilson, Chicago; Chevalier Jackson, Philadelphia; Otto Mayer, Vienna; Fernand Lemaitre, Paris; Ledoux, Brussels, and Barraud, Lausanne, Switzerland. The American delegation will sail, September 17, from New York on the S. S. *Rochambeau*. Information may be obtained from M. Marcel Colin, 8 Investment Building, Washington, D. C.

British Medical Election.—Dr. Thomas Gillman Moorhead, Dublin, president of the Royal College of Physicians of Ireland and regius professor of physic in Trinity College, University of Dublin, was chosen president-elect of the British Medical Association at the annual meeting in July in London. He will succeed Lord Dawson of Penn. It was announced that Dr. G. C. Anderson, deputy secretary of the association, would succeed Dr. Alfred Cox, who will retire, October 1. A portrait of Dr. Cox, painted by Sir Arthur Cope, was presented to the association at a special testimonial meeting. At the final general meeting a portrait of Dr. Elizabeth Garrett Anderson, first woman to be admitted to the association, was also presented. Dr. Leslie George Housden, Basingstoke, was announced as the winner of the Sir Charles Hastings Clinical Prize for 1932, for his essay entitled "Studies in Breast Feeding."

Society News.—Dr. Edgar D. Adrian gave the fourth Victor Horsley Memorial Lecture at the University College Hospital Medical School, London, July 20, on "The Visceral Sense Organs."——The West London Medico-Chirurgical Society celebrated its fiftieth anniversary at its annual dinner, July 8.——The third international congress of the International League Against Rheumatism will be held in Paris, October 13-15, under the presidency of Dr. R. Fortescue Fox, London. Subjects to be considered are early symptoms of chronic rheumatism, rheumatism and tuberculosis, rheumatism and the medical profession. Details may be obtained from Dr. J. Van Breemen, Keizersgracht 489, Amsterdam, or from Dr. Mathieu P. Weil, 60, Rue de Londres, Paris, IX.——Dr. John Shields Fairbairn, London, was recently elected president of the British College of Obstetricians and Gynecologists.——The seventh International Congress on the Care of Children will be held in Paris, July 5-9, 1933. Main subjects of discussion will be the medical supervision of sports and the relation between charity and the state.

Centenary of Irish Journal.—Two anniversaries are commemorated with the June issue of the *Irish Journal of Medical Science*—the centenary of the old *Dublin Journal of Medical Science* and the fiftieth anniversary of the founding of the Royal Academy of Medicine of Ireland, whose official organ the journal has become. In 1832, Robert John Kane began the publication of the *Dublin Journal of Medical and Chemical Science*. With the issue of May, 1836, the name was changed to the *Dublin Journal of Medical Science*. In 1845 the series was brought to a close and on Feb. 1, 1846, appeared the first number of the *Dublin Quarterly Journal of Medical Science*. The Royal Academy of Medicine, which had been founded in 1882, assumed full control of the journal in March, 1920. The centenary issue opens and closes with articles by Dr. Thomas P. C. Kirkpatrick, secretary general, Royal Academy of Medicine in Ireland. It contains papers by Dr. George Crile, Cleveland; Sir Humphry Rolleston, Sir Robert Jones, E. Hastings Tweedy, J. M. Munro Kerr, Jean-Louis Faure and E. Essen-Möller.

Foreign Letters

LONDON

(From Our Regular Correspondent)

July 29, 1932.

Annual Meeting of British Medical Association

The annual meeting of the British Medical Association was held in London. It was the centenary of the founding of the association.

THE PRESIDENTIAL ADDRESS

In his presidential address, Lord Dawson sketched the progress of medicine during the century of the association's existence. The knowledge of immunity foreshadowed by Jenner, established by Pasteur, and rationalized by Ehrlich and others, had extended. In this country the mantle rests on Wright, who has enriched medicine not only by his discoveries but also by his provocative thought. The study of immunity shows that the remedy lies within man himself—a potential energy which becomes kinetic in the face of the foe. It may be temporarily replaced by serum, but its origin and power must come from the tissues of the body. So it is with the hormone or vitamin which is a determinant of rather than a partner in bodily reaction. In these days the diseases of invasion are receding and the diseases of stress loom larger. A man's physical and mental make-up play no small part in the clinical picture he presents. The mental make-up, inherited and acquired, may color or even confuse the picture presented by a physical illness. There is a fundamental error of thought, that disturbances of the mind are under one's control and therefore are one's fault, whereas disturbances of the body are not under one's control. This false doctrine of control, and all the perversions of the doctrine of free will, with which it has long been entangled, is responsible for much faulty thinking and human suffering.

As to treatment, the mere giving of medicine will often accomplish but little; it is regimen and reeducation that are wanted. A new type of institution, distinct from a hospital, is needed—a health hostel for the overweight person who avows himself a small eater yet is clogged with his own metabolic products, for the various gastro-intestinal victims who need to be taught how to eat, and for the person with early diabetes who needs instruction in food calories. The good of the people demands education in matters of health. The medical faculty of a university could provide approved lectures. For research there is need for further coordination among bodies which represent varied aspects of medical knowledge, such as the basic sciences, medicine, surgery, obstetrics, education and administration. It is a reproach against our profession that we do not establish the means of giving collective advice when government depends increasingly on our knowledge.

THE NONPAYMENT OF PHYSICIANS FOR ROAD ACCIDENTS

At the meeting of the representative body, a motion was submitted urging the government to assume responsibility for the provision of emergency medical treatment in all road accident cases. The reasons given were the alarming increase of these accidents, the growing demands on physicians to render first aid, and the infrequency of payment. Last year 180,000 accidents occurred on the roads. First aid treatment by physicians might save much suffering and much money on the part of insurance companies—a fact which the companies were only beginning to realize—in relation to compensation. It was therefore suggested that the insurance companies might provide a "pool" for this purpose, as they did for fires in connection with the London salvage corps. A woman physician who lived near an important road said that she received payment for only 10 per cent of the accidents which she attended. The motion was referred to the council.

TRIBUTE TO THE FOUNDER OF THE ASSOCIATION

A pilgrimage was made to Worcester to pay honor to the memory of Sir Charles Hastings, a physician of that city, who founded in 1832 the Provincial Medical and Surgical Association, to improve the position and organization of the medical profession. From this association the British Medical Association has developed. The president unveiled a memorial window in the cathedral and a service took place at which Dr. Barnes, F.R.S., bishop of Birmingham, the well known modernist, preached. Having paid tribute to the foresight of Hastings in founding the association and to the great advance of medicine in England during the nineteenth century, he asked: What of the future? They were told to expect increased power to control disease, but his daily experience warned him that we are not safe from religious reaction. The basis of civilization was none too firm, and only by resolute and sustained vigilance could progress be preserved. New aspects of truth often bewildered men and aroused their instinctive opposition. They easily turned to old superstitions slightly disguised and invoked religious sanctions in defense of ingrained prejudices. Our knowledge of human heredity may so increase that we can, by preventing the birth of children to certain persons, raise the quality of our population. Will pseudo-religious prejudice not impede the good work? Religious prejudice gave strength to the clamor against vaccination when first introduced. During the last four centuries the search for truth had been impeded by superstitions and false dogmas.

HOW MAY A SPECIALIST NOTIFY HIS COLLEAGUES THAT HE HAS BEGUN TO PRACTICE?

After considerable discussion it was decided that a specialist may notify his colleagues that he has begun to practice (1) by calling on physicians already established in the area; (2) by sending them a sealed notification, provided there is no laudatory reference to himself; (3) by communications to the local division of the British Medical Association or other medical organization; (4) by sending reprints of his published work to physicians who may be expected to be interested. However, one speaker pointed out that calling on local physicians was a two-edged weapon and might cut off the budding specialist's chances of success. He recalled the fate of two brilliant young men who called in the manner of a commercial traveler. This cost them any chance they had of succeeding.

SHOULD MEDICAL PATENTS BE ALLOWED?

The question whether medical patents should be allowed has given rise to much discussion in the profession. A comprehensive resolution was passed. The meeting was invited to endorse a resolution passed at a joint conference of the Royal Colleges of Physicians and Surgeons and council of the British Medical Association, which declared that the further granting of patents in the medical field is undesirable in the public interest and that any action to prevent or regulate by international action the further granting of such patents would be welcomed. While the meeting was emphatic with regard to bacteriologic products, it was not convinced that the granting of patents for the synthetic preparation of new substances has been similarly detrimental to progress. It was also recognized that a purely national abolition of medical patents might unjustly penalize commercial enterprise in this country. It would gladly see established a mechanism by which patents for preparations other than biologic could be dedicated to the use of the public. It was held that until some such system is established the special position held by physicians in the community renders it undesirable that they should apply for patents in the medical field. Thus this resolution for the first time draws a distinction between bacteriologic and synthetic products.

FOODSTUFFS AND THE CALCIFICATION OF BONE

Prof. Edward Mellanby dealt with foodstuffs influencing calcification. Those stimulating the formation of perfect bone

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are milk, butter, egg yolk and the fat of meat and fish. All these contain vitamin D, and of these milk, cheese and egg yolk are also rich in calcium and phosphorus. The chief foods hindering calcification are cereals—bread, oatmeal, maize, rice. Other foods which, by stimulating growth and not exerting a corresponding influence on calcification, tend to bring about defective bone formation include lean meat, white fish and most vegetable fats. Vegetables and fruit seem to be more or less indifferent in their action, although in some circumstances the calcium content, especially in the case of green vegetables, may aid calcification. Sometimes green vegetables may even contain a small amount of vitamin D, especially if recently exposed to sunlight. Naturally, also, the vitamin C content of fruit and vegetables prevents scurvy, and thus defends the bones against scorbutic influences. Thus the need for including calcifying foods in the diet is greatest during growth and when cereals are the main constituents of the diet. Since the child's consumption of food is limited, the greater the amount of bread and other cereals eaten the less likely is it that sufficient milk and eggs will be consumed to insure proper bone formation. Further, cereals are the cheapest and therefore the most greatly consumed articles of diet. Climatic conditions in this country are such that the baneful effects of cereals cannot ordinarily be counteracted by ultraviolet radiations. Indeed, all the circumstances—climatic, dietetic and economic—in this country appear to be conducive to defective bone formation. No cereal concoction or cereals ought to be given to an infant for the first eight or nine months, and even after this only in small amounts for the first two years. Cereals form far too great a part of the diet at all ages and might well be replaced to a large extent by milk, eggs, cheese, vegetables and fruit throughout life. The high cost of milk makes a sufficiency difficult for a large proportion of the population; large scale reduction of rickets by increased consumption of milk is therefore unlikely at present. Nor will butter act as a substitute for milk, since in the presence of cereals the antirachitic action of butter is small. But butter can be made much more antirachitic by giving it with additional calcium, 10 per cent calcium phosphate or carbonate. If some means could be found of making butter so that it retained the calcium of the milk, a great advance in the improvement of bone formation would follow.

PARIS

(From Our Regular Correspondent)

July 20, 1932.

Quarantine and Scarlet Fever Patients

The official regulations establish forty days as the duration of the quarantine of scarlet fever patients. It is the time that must elapse before the child who has recovered from scarlet fever will be readmitted to school. Professor Marfan, writing in the review *Le Nourrisson*, expresses the opinion that the regulations are too rigid and that the duration of the isolation should be determined in each case, for the time when the patient is no longer contagious varies. To appreciate the fact one need only recall that the gravity of scarlet fever and the fear of complications are measured by the intensity of the sore throat. The virus of scarlet fever has its seat chiefly in the throat; hence, as long as the mucosa of the throat is red, swollen and more or less covered with exudates, and as long as the glands of the neck remain frankly palpable, there is justification for the belief that the patient is still contagious, even though the temperature has been about normal for several days. On the other hand, when the throat of the patient has entirely cleared up and the glands of the neck have much diminished in volume, he may be regarded as noncontagious if the temperature is normal, and that stage is reached, in scarlet fever without complications, about the twenty-fifth day. Professor Marfan emphasizes that in all cases the quarantine should continue until the twenty-fifth day. The patient should then be examined as to the condition of the throat, the glands of the neck and the amount of albumin in the urine, if any. If the results are satisfactory, the patient should take a full soap and water bath, and, two days later, or the twenty-seventh day, all the examinations should be repeated. If there is no evidence of an unfavorable change in the patient's condition, he should be required to take a second soap and water bath and put on clean garments, after which he should leave the isolation room, which then should be fumigated and disinfected. In severe, complicated cases of scarlet fever, however, it happens that, even on the fortieth day, the throat has not entirely cleared up, while the adenopathy remains perceptible and the temperature is still above normal, or some complication may be in the course of evolution. Such patients are still contagious and should remain isolated. It will be seen, therefore, that the required period of isolation will vary greatly with the cases; but twenty-five days may be regarded as the minimum. The official period of isolation is thus often too long or too short.

Cancer Week

The custom is growing in France of setting aside, each year, a week to be devoted to propaganda, among the public, in favor of means of combating cancer. Tuberculosis week has become traditional with its sale of tuberculosis seals. Last year the sale of tuberculosis seals produced a profit of 20,000,000 francs ($800,000), which was used in support of the antituberculosis dispensaries or devoted to the erection of sanatoriums. Tuberculosis week furnishes, at the same time, an opportunity of giving advice to the general public by means of the distribution of tracts and the organization of radio lectures on the suitable methods of preventing tuberculosis and of treating it, once it is contracted. There has been, for some time, a mental hygiene week, which, by reason of its too special character, does not appear to have gripped the public. On the contrary, cancer week, which has just been celebrated, awakened great enthusiasm. Another useful week to celebrate in France would be temperance week, in support of the campaign against alcoholism. But there is little likelihood that such a week will be inaugurated, so great is the fear of antagonizing the dealers in alcoholic beverages, whose political influence is great.

Cancer week was the occasion for some remarkable addresses by eminent specialists, usually by the directors of the various anticancer centers of France. Professor Regaud, director of the Curie Institute in Paris, lectured on "How to Prevent and Cure Cancer of the Uterus." He affirmed that this form of cancer, if diagnosed early, and treated with radium or penetrating roentgen rays, would have its mortality reduced to less than one fourth of the present rate. Professor Lambret of Lille spoke on the necessity of early detection of cancer. Professor Sabrazès of Bordeaux spoke on "What Do We Know About Cancer?" He concluded that, while the key to the problem has not been found, worth-while progress has been made. Dr. Jeanneney of Bordeaux discussed "The Causes of Cancer." In the present state of our knowledge, he emphasized that neither heredity nor contagiousness can be regarded as demonstrated, at least not in man, although they have been demonstrated in certain laboratory animals. In view of the existing uncertainty, it is perhaps a good plan for persons to conduct themselves in the same manner as they would if these theories were established, by observing rigorous cleanliness and avoiding marriages between families in which there are numerous cases of cancer on both sides. Professor Imbert of Marseilles reviewed the forms of treatment recommended for cancer—radium, surgery, various medications—and concluded, in line with the other speakers, that their value depended on the promptness with which they were applied—that is to say, on an early diagnosis. Dr. Tisserand of Besançon discussed more particularly the question of uterine cancer and pointed out the magnificent results accomplished by surgery in cases recognized early—

hence the advice given women of seeking an examination twice a year, with this object in view, by the surgeon, and especially on the appearance of any irregular hemorrhage. Dr. Degrais, specialist in radium therapy, spoke on this treatment, which is so often effective in skin cancers. Professor Hartmann, whose opinion in these matters is universally recognized, took as his subject "We Must Cure Cancer, Patients," an encouraging slogan, in support of which he introduced the most precise statistics. Professor Forgue of Montpellier spoke on the topic "What Every Woman Should Know Concerning Cancer of the Uterus." Dr. Gunsett of Strasbourg uttered warnings against illusory methods of treating cancer. In France today a great many persons are taking magnesium salts, concerning the value of which there has been much publicity in the press, with many references to the laboratory experiments of Delbet, and imagine that they are thus fully protected against cancer. Professor Lambret cited the case of a patient in whom he diagnosed cancer of the breast, whereupon the patient replied that the diagnosis could not be correct, for she had been taking magnesium salts daily. Furthermore, Professor Sabrazès declared that, during the five year period that has elapsed since this medication was adopted by hundreds of thousands of persons, the cancer rate has not diminished in the slightest.

BERLIN

(From Our Regular Correspondent)

July 25, 1932.

Cancer Research

The Berliner Verein für Innere Medizin held recently a joint session with the Deutsches Zentralkomitee zur Erforschung und Bekämpfung der Krebskrankheit, which offered an opportunity to consider the present status of the cancer problem from its various sides.

Professor von Bergmann, the chairman, outlined a significant program for cancer research. He emphasized that in waging a crusade against cancer every individual scientific research will, in the end, be more significant and more successful than the greatest organizations, which have, to be sure, a pious desire but have not as yet the power of accomplishment.

The various addresses showed plainly that, in recent decades, the work in the field of tumor research has taken on a peculiar aspect. Tumor research is today no longer dependent on other fields to which it was formerly attached and from which it was derived, but it has now its own methods and has, without doubt, already enriched all branches of medicine, and particularly biology, with many important ideas and conceptions.

Dr. Hans Laser, of the Heidelberg institute for cancer research, was the first speaker on the program and discussed "Manometric Measurements of the Metabolism of Tissue Cultures." In harmony with the methods with which Otto Warburg obtained his famous results, he developed very exact and delicately elaborated methods of solving the quantitative problem, which is difficult of approach.

The second speaker, Frederick L. Hoffman, reported on "Recent Results of the Special Cancer Census in San Francisco."

Professor Caspari of Frankfort-on-Main considered "Nonspecific Immunity in Cancer, and the Significance of Necrohormones." Caspari presented the views in this field, which he has been studying for thirty years. He believes that the definitive healing of cancer, either through ray treatment or through operation, depends to a great extent on the so-called nonspecific defense reactions of the body, which are produced by the degeneration of the tumor cells and by the irritating substances given off by them to the body. That is the only explanation for the healing of tumors in spite of the fact that ray treatment does not, by any means, kill all the tumor cells. For the practical evaluation of these points of view, quantitative researches are urgently needed. Caspari did not depart from the realm of theory and refused to apply his theories to modern practice, leaving that to the future.

Before closing the session, Dr. Höfer of Berlin presented a cinematographic film of a tissue culture of human cancer cells.

Tomatoes and Cancer

The select committee of the Deutsches Zentralkomitee zur Erforschung und Bekämpfung der Krebskrankheit has studied the question that has been circulating among the people for some time as to whether the eating of tomatoes has any causal connection with the genesis of cancer. Recent scientific studies have not established anything positive. Various observations—the heavy consumption of tomatoes in Spain and the beneficent effects of tomato juice in the diet of infants—are likewise opposed to such an assumption. The committee reached the conviction that there is no reason for making the eating of tomatoes responsible for the genesis of cancer.

Is Sterilization an Injury in the Legal Sense?

Recently, the small city of Offenburg in Baden witnessed the trial of a case of great importance, and one that is awakening interest among physicians and the public. The trial resulted in a prison sentence of one year for Medizinalrat Merk (aged 60), the director of the municipal hospital in Kehl, for infliction of bodily injury, and likewise imposed prison sentences on two physicians of Kehl as his aids. It has opened a new problem for the medical and legal professions in Germany: Is medical intervention on a woman's body for the purpose of effecting sterilization punishable by law?

The director of the gynecologic institute in Berlin, Professor Liepmann, who was an expert witness in the case, deserves commendation for having recognized the fundamental importance of the Offenburg transactions and for having arranged for their discussion at his institute. Doubtless most gynecologists have never surmised that such an operative intervention renders the operator liable to prosecution in the courts.

After Director Schmitz, of the Berlin Landesgericht, had discussed the problem of sterilization from the legal side, it was considered from the medical point of view by Professor Liepmann. In the case of the condemned Medizinalrat Merk, it is not a question of a careless or overzealous experimenter but of an experienced and skilled operator, whose interventions had always been successful. Forty-one cases of artificial sterilization were charged against him, although not one of his patients had suffered any injury, in the ordinary sense of the word. Furthermore, the condemned man is the government medical officer of the district, who was filled with a sense of responsibility in performing the duties of his office and was actuated by a readiness to relieve human suffering, which characterizes his profession. Precisely this situation of affairs enhances the fundamental significance of this case.

In a closing statement, Director Schmitz called attention to the fact that the trial judge had shown a wide understanding for the problem, as could be seen especially by the fact that he had taken a broad view of the matter and had not accepted the idea of a "severe bodily injury," which the penal code puts down as a penitentiary offense, but had only assumed a dangerous bodily injury.

Artificial sterilization of women, Professor Liepmann explained, is permissible if it is performed with a specific therapeutic purpose in view; for example, in connection with the removal of a cancerous tumor or a tuberculous focus. But this conception of a therapeutic purpose is not clearly defined from the medical point of view. It is certain, however, that the guilt of the physician is established if the artificial sterilization was performed solely for the purpose of making the woman sterile. In none of the forty-one cases, which constituted the charge against the defendant in the Offenburg trial, was that the case. But the court was convinced that Medizinalrat Merk did not always inquire zealously enough into the cases. Although the director of a hospital, he had to work

without the aid of an assistant director and therefore had no time to write case histories. The court held that against him as a serious matter. Although the justification of the decision did not take such a narrow view of the conception of a therapeutic purpose, yet the trial judge thought that in a number of sterilizations the therapeutic purpose was not clearly in evidence. It is an offense against good morals, the justification sets forth, to perform a sterilization when the purpose is to obtain relief from the duties of conjugal and family life. There is grave danger that sterilized women may be led into dissolute ways and to undue yielding to their sexual desires. But the patients of the Kehl physician were without exception poor, anemic women of the proletariat class. There is another point: the consent of the patient to the surgical intervention has no bearing, according to the existing laws, on the guilt of the operator; even though the patient gave her consent, the offense against good morals still stands.

The judgment of the Offenburg trial has revealed a complete confusion of ideas. What will the eugenists and the promoters of race hygiene have to say, who, in the interest of public health, demand the sterilization of persons whose progeny is likely to constitute a menace to the public welfare? Such criminal prosecution of physicians for performing sterilization concerns the fundamental rights of the medical profession, and raises the question, as Director Schmitz formulated it: What is the basis of a physician's right to operate and by what legal provisions is that right assured? Here is an evident omission in the existing penal code, nor is the omission fully covered by the improved regulations of the new draft of the code. The Offenburg trial shows, at the same time, under what difficult conditions respected and honorable physicians must work and what causes may give rise to serious charges and the imposition of fines or a prison sentence.

BUCHAREST

(From Our Regular Correspondent)

July 21, 1932.

Tabetic Optic Nerve Atrophy

Dr. Joseph Hamburg, chief ophthalmologist to the Jewish hospital at Cluj, Rumania, carried on extensive experiments with the treatment of optic nerve atrophy by increasing cell oxidation. News of his achievements with this treatment reached the Vienna Ophthalmologic Society and resulted in an invitation to lecture. He did so, May 23. His report was favorably received and his method now is being used by some of the most prominent ophthalmologists of Vienna. In his investigations, Hamburg was led by the following reasoning: The therapeutic methods employed in this disease have aimed mainly at breaking through the blood vessel and nerve sheaths. According to the investigations of Igersheimer the spirochetes do not stay in the nerve itself but in the meninges and the adventitiae of the nerves and vessels, wherefore attacks against the barriers do not seem to be practical. These observations of Igersheimer support the theory that in the development of the disease some toxic components are indirectly acting on the spirochetes. The manner of action of these toxic factors is unknown. According to Dr. Hamburg this is the main point of the whole tabes question. He studied other toxic optic nerve atrophies. Methyl alcohol poisoning conforms with tabetic optic atrophy in many points. Knowledge of the chemical mechanism of the poisoning action in methyl alcohol intoxication is valuable in this analogy. In cases of methyl alcohol poisoning there is a reduction of the cell oxidation, provoked by the disturbance caused by heavy metal catalysis. Hamburg assumed that in cases of optic nerve atrophy a similar toxic action prevails and he tried to influence the morbid process by the administration of drugs that are capable of exaggerating oxidation, as thyroid hormone and manganese.

The best results are achieved by administering intramuscular injections of solution of potassium permanganate, 1 cc., or one or two thyroxine injections, given intravenously. He himself applied in the majority of cases potassium permanganate and only in a few cases thyroxine. By applying potassium permanganate he observed some by-effects, which, however, are not annoying. The principal by-effect is the acceleration of the pulse, sweating, and in some cases light trembling of the limbs, a curious coincidence reminding one of exophthalmic goiter. Besides these manifestations some patients complain of moderate pains in the lower limbs and joints, localizing these to the bones. Injections of thyroxine are not accompanied by such severe by-effects, and, if there are any, they are of short duration.

According to Hamburg, the visual power of tabetic patients is greatly influenced by physical work. The optimum of their visual power is found in the morning. Bodily work involves the consumption of oxygen and thereby the existing lack of oxygen is increased. He deems it important that tabetic patients should observe the rule of the strictest rest, particularly if they suffer from optic atrophy.

He treated seven patients. In five of these a considerable improvement could be noticed. In one of the cases the visual power rose from 3/50 to 3/12. The visual field increased three or four fold, and color vision returned. In another case the visual acuity improved from 1/35 to 1/10 and in the left eye from 1/50 to 1/10, with considerable increase of the visual fields on both sides. The white color limit extended fourfold. The third patient had an improvement of the visual power from 1/36 to 1/12 on the right side and from 1/36 to 1/16 on the left side, with an unchanged visual field. In the fourth case the visual power rose from 3/25 on the right side to 3/10 and on the left from 5/40 to 5/16. The right visual field was expanded to white color, and the blue-yellow sensation returned; on the left side the blue field was considerably expanded. In the fifth case light perception rose from 1 to 6 meters and also the seeing of hand motion improved.

Even if this slight gain does not mean much for the patient, the case should be evaluated as "positive." In two cases the visual power decreased after a transitory improvement. One of these patients was a child suffering from congenital syphilis.

Five of seven cases showed a decided improvement. It can be stated without undue optimism that the improvement could be ascribed to the treatment. It is safe to say that however skeptical one is, and in tabetic optic atrophy one must be skeptical, thyroxine and manganese, by increasing oxidation in the cells, are capable of favorably influencing tabetic optic atrophy. It needs further experimentation, and it will be a long time until final conclusions as to the definite results of this therapeutic method can be drawn.

Marriages

HOWARD E. MATHAY, Youngstown, Ohio, to Miss Mary Siple of Cleveland, in Staunton, Va., August 3.

EDWARD LAWRENCE VOKE, Akron, Ohio, to Miss Julia Eleanor Morton of New York, July 9.

NATHAN PALMER FITTS, Williamsburg, Va., to Miss Lucille Branderberger of St. Louis, July 12.

OSCAR WALTER FRISKE, Beloit, Wis., to Margaret Hall Schulmeyer of Indianapolis, July 27.

CHARLES HAROLD SPIGGLE, Strasburg, Va., to Miss Ann Margaret Chiles, July 20.

DOUGLAS NELSON GIBSON to Miss Marcella Powell, both of Des Moines, in July.

STEWART M. GIBSON, Southbridge, Mass., to Miss Bernice G. McGilvray, July 30.

ELMER W. NAHRWOLD to Miss Magdalen Lange, both of St. Louis, August 4

RUTH FOLJAMBE, Boston, to Mr. George Rogers Copeland, July 23.

Deaths

John George Spenzer ✱ Cleveland; Medical Department of Western Reserve University, Cleveland, 1884; instructor in pharmacology at his alma mater and professor of chemistry at the dental school, 1894-1896; professor of general and medical chemistry and pharmacology at the Cleveland College of Physicians and Surgeons, Medical Department Ohio Wesleyan University, 1896-1910; professor of chemistry, legal chemistry and medical jurisprudence at his alma mater, 1910-1917; aged 67; died, July 26, in the Cleveland Clinic Hospital, of diabetes and prostatic hypertrophy.

Samuel Wyllis Bandler, New York; College of Physicians and Surgeons in the City of New York, 1894; member of the Medical Society of the State of New York and the American Association of Obstetricians, Gynecologists and Abdominal Surgeons; fellow of the American College of Surgeons; formerly professor of gynecology at the New York Post-Graduate Medical School; author of "Medical Gynecology"; aged 62; died, July 31, at his summer home in Scarsdale, N. Y.

Joseph Marion Little, Pana, Ill.; Missouri Medical College, St. Louis, 1899; member of the Illinois State Medical Society; medical superintendent and owner of a sanatorium bearing his name; aged 64; was instantly killed, July 11, when the automobile in which he was driving was struck by a train.

Cassius True Lesan ✱ Mount Ayr, Iowa; Rush Medical College, Chicago, 1897; member of the State department of health; for many years county coroner and city health officer; served during the World War; aged 58; died, July 9, of arteriosclerosis and uremia.

Pennuel Columbus Worley, Shreveport, La.; Memphis (Tenn.) Hospital Medical College, 1899; member of the Louisiana State Medical Society; aged 59; died, July 21, in the North Louisiana Sanitarium, of acute intestinal obstruction.

Henry Franklin Wilkins, Birmingham, Ala.; Medical College of Alabama, Mobile, 1893; aged 62; died, July 17, in the United States Veterans' Hospital, Alexandria, La., of chronic encephalitis with parkinsonian syndrome.

William Osborn Lambly ✱ Lebanon, N. H.; McGill University Faculty of Medicine, Montreal, Que., Canada, 1894; aged 60; died, May 17, at the Mary Hitchcock Hospital, Hanover, of acute hemorrhagic pancreatitis.

Hugh H. Atkinson, Indianapolis; University of Pennsylvania School of Medicine, Philadelphia, 1898; formerly on the staff of the Central State Hospital; aged 61; died suddenly, July 2, of angina pectoris.

Charles William Demong, Syracuse, N. Y.; Syracuse University College of Medicine, 1906; member of the Medical Society of the State of New York; aged 50; died, June 25, of mitral insufficiency.

John Isaac Davis, Oteen, N. C.; Ohio Medical University, Columbus, 1894; for several years on the staff of the U. S. Veterans' Hospital number 60; aged 63; died, July 5, of chronic myocarditis.

Homer Isaac Rexford ✱ Willard, N. Y.; Albany (N. Y.) Medical College, 1915; served during the World War; on the staff of the Willard State Hospital; aged 41; died, July 11, of aplastic anemia.

F. S. LeRoy Holmes, Kemptville, Ont., Canada; Queen's University Faculty of Medicine, Kingston, 1877; medical health officer for Kemptville and district for many years; died recently.

James E. Burgess, Detroit; Michigan College of Medicine and Surgery, 1893; for twenty years county coroner; aged 65; died, July 6, at his summer home near Pontiac, Mich., of heart disease.

Thomas Heisler Chattle, North Bay, N. Y.; University of Vermont College of Medicine, Burlington, 1887; served during the World War; aged 68; died, July 8, of heart disease.

Rozel M. Curtiss, Marengo, Ill.; College of Physicians and Surgeons, Chicago, 1884; Chicago Homeopathic Medical College, 1885; aged 76; died, July 3, of angina pectoris.

Marion A. Emshwiller, Montpelier, Ind.; Medical College of Indiana, Indianapolis, 1891; served during the World War; aged 62; died, June 30, of carcinoma of the duodenum.

Frank W. Mitchell, Medford, Wis.; Chicago Physio-Medical Institute, 1887; member of the State Medical Society of Wisconsin; aged 68; died, July 1, of heart disease.

Cornelius Joseph Egan ✱ New York; New York University Medical College, 1897; aged 64; died, June 26, in the Royal Hospital, of acute gangrenous cholecystitis.

Charles J. Scott, Marietta, Ohio; Jefferson Medical College of Philadelphia, 1881; member of the Ohio State Medical Association; aged 74; died, June 24, of typhoid.

Hunter J. Duvall, Hutchinson, Kan.; Kansas City Medical College, 1894; member of the Kansas Medical Society; aged 65; died, June 27, of carcinoma of the prostate.

George Young Hord, Keyesport, Ill.; Medical College of Ohio, Cincinnati, 1878; formerly postmaster of Keyesport; aged 83; died, June 21, of carcinoma of the liver.

Donald Mackintosh, Pugwash, N. S., Canada; Harvard University Medical School, Boston, 1871; L.R.C.P., Edinburgh, Scotland, 1873; aged 84; died, February 10.

Donald D. Salley, Cope, S. C.; Vanderbilt University School of Medicine, Nashville, Tenn., 1894; aged 62; died, June 16, in a hospital at Orangeburg.

Benjamin Franklin Houston, Corsicana, Texas; Medical Department, University of Tennessee, Nashville, 1887; aged 79; died, May 26, of brain softening.

David Joseph Herlihy, Cambridge, Mass.; Tufts College Medical School, Boston, 1916; served during the World War; aged 38; died, June 12, of pneumonia.

Clarence Allen Copeland, Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1919; aged 45; died, June 26, of cerebral hemorrhage.

Rowland I. Haines, Pitman, N. J.; University of Pennsylvania School of Medicine, Philadelphia, 1890; aged 64; died June 25, of carcinoma of the rectum.

John Thornton Sibley, Los Angeles; American Medical College, St. Louis, 1874; aged 80; died, May 15, of softening of the brain and arteriosclerosis.

Abner O. Clark, Ridge, La.; Medical Department of the Tulane University of Louisiana, New Orleans, 1887; aged 73; died, June 27, of heart disease.

Harry Bosworth Crocker, San Francisco; California Eclectic Medical College, Los Angeles, 1900; aged 55; died, July 6, of cerebral hemorrhage.

Park M. Lehman ✱ Ney, Ohio; Starling Medical College, Columbus, 1888; for thirty-five years postmaster; aged 74; died, July 9, of heart disease.

Agnes Walker ✱ Bolinas, Calif.; Cooper Medical College, San Francisco, 1893; aged 57; died, June 7, in San Francisco, of carcinoma of the liver.

Herman R. Russell, St. Paul; College of Physicians and Surgeons, Chicago, 1899; aged 60; died, June 29, in St. Luke's Hospital, of heart disease.

John M. Floor, Petersburg, Ohio; Eclectic Medical Institute, Cincinnati, 1875; aged 79; died, July 4, of injuries received in an automobile accident.

Joseph Powell Speight, Rocky Mount, N. C.; Jefferson Medical College of Philadelphia, 1906; aged 47; died suddenly, July 29, of heart disease.

Gilbert N. Bailey, Baileyton, Tenn. (licensed, Tennessee, 1889); aged 65; died, July 5, of hypertrophic osteo-arthritis and chronic myocarditis.

James William May, Headrick, Okla. (registered in Oklahoma by the state board of health under the Act of 1908); aged 52; died, July 11.

Daniel F. Shipley, Westminster, Md.; Hahnemann Medical College of Philadelphia, 1882; aged 76; died, July 9, of heart disease.

Thomas F. Bray, Reed City, Mich.; Hospital College of Medicine, Louisville, Ky., 1894; aged 63; died, June 29, of heart disease.

Rose F. Jackson, St. Petersburg, Fla.; Cleveland Homeopathic Medical College, 1899; aged 62; died, July 6, of chronic nephritis.

Jefferson Davis Austin, Clinton, S. C.; Atlanta Medical College, 1885; aged 71; died, July 21, of arteriosclerosis.

Charles Frank Elrod, Chariton, Iowa (licensed, Iowa, 1886); aged 83; died, May 15, of cerebral hemorrhage.

Ernest D. Starbird, Denver; Gross Medical College, Denver, 1902; aged 59; died, June 12, of pneumonia.

Elmer G. Gray, McComb, Ohio; Columbus Medical College, 1892; aged 65; died, June 26, of heart disease.

C. C. Bruton, Nella, Ark. (licensed, Arkansas, 1903); aged 80; died, June 5, of senility.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

ABDOMINAL PAIN OF UNKNOWN ORIGIN

To the Editor:—I have a patient who had a severe attack of abdominal pain in the lower part of the abdomen two weeks ago, following a ride on horseback of 7 miles. There was nausea and vomiting of a severe nature. He has had several attacks of this "acute indigestion," as he calls it, in the last few years. Morphine, one-fourth grain (16 mg.), was required to relieve this pain. He is a white man, aged 55. The physical examination revealed nothing at that time except some tenderness in the lower quadrants, most marked in the lower left. Three days later the prostate was examined. It was smaller than normal, and some soft areas were present. The smear showed a few pus cells, with much granular debris, some corpora amylacea and a few prostatic granule cells. There is no increase in the sensitiveness of the gland. One week later he reported that he was feeling better than he had felt in six weeks and had gained 5 pounds (2.3 Kg.). The prostatic smear at this time showed many clumps of pus cells and myriads of single pus cells. It was no more tender than the normal gland. One week later he reported that he had another attack, following a ride of 7 miles in a wagon. This attack was not as severe as the first one two weeks before. The prostatic smear at this time shows many pus cells, but no clumping of the pus cells. Am I justified in making a diagnosis of chronic parenchymatous prostatitis? There are no symptoms of tuberculosis in the lungs or elsewhere. Is prostatic massage contraindicated in a man of this age? What are the age limits for massage, if any? Please omit name and address.

M.D., Tennessee.

ANSWER.—The history of a severe attack of abdominal pain associated with nausea and vomiting, and the fact that it was necessary to give morphine to relieve this pain, leads one to make a diagnosis of abdominal colic. The three common causes of abdominal colic of this severity are gallstone colic, kidney or ureteral stone colic, and intestinal colic. Furthermore, in view of the fact that the patient has had several attacks of colic described as "acute indigestion," a careful examination to determine the cause of these attacks of pain should be made. A plain roentgen examination of the urinary tract should be made to determine the presence or absence of stone, and if negative an intravenous pyelogram may be made. If stone in the urinary tract has been ruled out, the next step would be the study of the gallbladder with plain films and with a cholecystogram. Failure to obtain information from these two sources would justify a careful examination of the gastro-intestinal tract. It is necessary, of course, in this differential diagnosis to rule out tabes dorsalis.

From the further description it is evident that the patient has a mild chronic prostatitis. This should be treated with gentle massage of the prostate at weekly intervals. Heat by rectum or hot sitz baths are desirable. The diagnosis of prostatitis is probably justified. Prostatic massage is not contraindicated in this patient, and we know of no age limits for massage. Nothing is stated regarding the condition of the patient's seminal vesicles. Occasionally renal colic may be due to a chronic seminal vesiculitis with periseminal vesiculitis and involvement of the ureter.

PULMONARY CONDITIONS IN RHEUMATIC FEVER

To the Editor:—A boy, aged 15 years, suffering from rheumatic endocarditis with aortic insufficiency, had a form of fibrinous bronchitis, last year, with spitting up of bronchial casts at intervals of one week or one month. On microscopic examination no bacilli of diphtheria or of tuberculosis were found on them. The cardiologist who was treating him at that time excluded the hypothesis that the fibrinous bronchitis was due to circulatory stasis in his lungs. Now the boy is suffering again from the same type of cough with spitting up of bronchial casts, and the cardiologist who is attending him now, in Europe, thinks that this type of bronchitis is due to the circulatory stasis in the lungs and therefore a sign of decompensation of the heart. I looked up the literature on the subject and found that fibrinous bronchitis is sometimes due to circulatory disturbances from mitral stenosis, and this patient positively never had any mitral stenosis. Could you give me your opinion or any reference I could look up? Please omit name.

M.D., New York.

ANSWER.—The pulmonary conditions associated with rheumatic fever and rheumatic endocarditis constitute an interesting diagnostic problem, about which varying views have been held for a long time. Cheatle mentions several cases of pneumonia associated with rheumatic heart disease in his classic lectures on rheumatic fever. No better clinical description can ever be written than Broadbent's.

Among the pulmonary changes associated with rheumatic fever and rheumatic endocarditis may be mentioned: (1) pulmonary compression associated with dulness and bronchial breathing at the left base; (2) pleural fluid associated with pulmonary compression at the bases, or pericardial effusion; (3) pulmonary infarction secondary to mural thrombi or to rheumatic phlebitis; (4) chronic passive congestion of the lungs as a result of impaired pulmonary circulation; (5) rheumatic pneumonia associated with histologic changes in the walls of the pulmonary arteries and perivascular spaces, and, finally, (6) frank bronchopneumonia occurring as an intercurrent infection at any stage of rheumatic fever.

If these possibilities are reviwed in association with the physical phenomena observed in this case, a conclusion can probably be reached as to the origin of the fibrinous casts. An excellent review on this subject is contained in the article entitled "Pleural and Pulmonary Lesions in Rheumatic Fever," by John R. Paul (*Medicine* **7**:838 [Dec.] 1928).

ECZEMA OF AUDITORY CANALS

To the Editor:—A man has what I call weeping eczema of both external auditory canals. He has had considerable trouble in the past with the wax hardening and packing right in the canal. There is also in this wax considerable desquamation. I have tried washing out with many kinds of antiseptic as well as plain salt water but yet the canal fills right up again with the wax and desquamation. I have used ointments and have tried 25 per cent silver nitrate solution. It is the most persistent thing I have ever seen. The patient never has eczema in any other part of the body and enjoys good health generally.

E. B. MINOR, M.D., Traverse City, Mich.

ANSWER.—It is assumed that no middle ear infection is present, draining into the canal and keeping up the irritation. The silver nitrate was used in too strong a solution. One might try swabbing the ear dry and painting the canal with 2 per cent solution of silver nitrate once a day, then applying a thin layer of zinc oxide ointment; or swabbing it clean once or twice a day and applying:

	Gm. or Cc.	
Rectified oil of birch tar, N. F.....	1/6	♏ xxv
Resorcinol	8	gr. xiii
Liquid petrolatum, sufficient to make	16	ʒ ss

If these measures fail, roentgen rays may be tried by an expert. This should not be continued after the eczema clears up or in any case more than eight weeks.

SYPHILIS WITH POSSIBLE OPHTHALMIC MANIFESTATIONS OF OTHER DISORDERS

To the Editor:—I have a patient with the following history: There was a primary sore on the penis twenty years ago. The Wassermann reaction at that time was four plus. Treatment at that time consisted of mercury, mostly by mouth, with a few intramuscular injections during the latter part of the treatment. One treatment with arsphenamine was given several years ago. When seen a few weeks ago, the patient complained of slight headache and the vision was a little defective. On physical examination the majority of reflexes were hyperactive. The right pupil was regular in outline and responded well to light and in accommodation. The left pupil was irregular in outline, was smaller than the right and reacted very poorly. A spinal puncture was done in the lower lumbar region and the fluid came out in an almost solid stream. No manometer was at hand, so the pressure was not taken. The 20 cc. of fluid that was withdrawn was divided into two portions and sent to two reliable laboratories. The first laboratory reported 2 leukocytes, globulin negative, total protein 25 mg. per hundred cubic centimeters, Wassermann reaction negative, colloidal gold curve 1111100000. The second laboratory reported the colloidal gold curve 1110000000, gum mastic 1100000000. The Pandy test was negative. Please advise treatment in this case. Kindly omit name and address.

M.D., Ohio.

ANSWER.—With what appears to have been a negative spinal fluid with respect to syphilis, this patient's probable diagnosis suggested by the headache, visual disturbance, pupillary changes and high fluid pressure is a localized syphilitic or other cerebral lesion, among which gumma, tumor and gliomatosis must be particularly considered. The colloidal gold tests are not definitely first zone and would usually be interpreted as negative. With the other essentially negative results in the fluid, the probabilities lean toward the diagnoses suggested. An ophthalmologic examination of the optic nerve heads would have been in order before this lumbar puncture was done in order to detect possible papillitis and choked disk, and the examiner was fortunate not to have lost the life of his patient through medullary block. Localized pachymeningitic processes, brain gummas and vascular neurosyphilis are well known to give negative spinal fluids to lumbar puncture.

The possible chain of events can only be guessed at in this case, but one wonders whether the single injection of arsphenamine several years before did not revive without subsequently suppressing a latent process in the nervous system with the appearance now of what might almost be regarded as a late neurorecurrent phenomenon. In all cases, even a single injec-

tion of arsphenamine should be followed up by heavy metal therapy to prevent allergic and precocious tertiary manifestations.

Treatment in this case should not be begun or resumed with the arsphenamines. Instead, the patient should receive large doses of potassium iodide by mouth; and a soluble mercurial salt, such as mercuric succinimide, 0.016 Gm. (one-fourth grain), three or four times weekly, intramuscularly, will give a rapid and at the same time safe response probably free from therapeutic shock. After twenty such injections the patient may be shifted to a bismuth compound, and after one or even two courses of ten weekly injections each, a further discussion of therapeutic possibilities in the light of improvement would be in order.

It must not be forgotten that syphilis is only one of the possibilities that will explain a picture of this sort and that other evidence of brain tumor and the like may be expected and should be searched for if improvement under treatment for syphilis is not reasonably prompt.

MENSTRUAL HERPES OR DERMATITIS

To the Editor:—A woman, aged 24, a light blonde, suffers from a vesicular dermatitis of the forehead, which occurs about twelve days before menstruation and which persists until shortly after the termination of the period. Her facial skin, which is very oily, shows enlarged pores, which are more pronounced over the nose than elsewhere. There has been some slight constipation, of nervous origin, for several months, during which time the menstrual periods have often been delayed for several days. She is using Armand's face powder and Richard Hudnut's rouge. What treatment do you recommend for her skin? Please omit name.

M.D., Arizona.

ANSWER.—In 1912, Matzenauer and Polland (*Arch. f. Dermat. u. Syph.* **111**:385) described a series of cases under the title of dermatitis symmetrica dysmorrhoica. The publication of this article was followed by the appearance of five other articles in the German literature. The eruptions were characterized by symmetrical streaks and bands on various parts of the bodies of neurotic young women during the menstrual period. However, the reports were not convincing and the eruptions were probably self inflicted.

Catamenial herpes on the face, genitalia or buttocks occurs with almost every period in some women. The eruption tends to occur in approximately the same area with each subsequent attack. In arriving at a diagnosis it is necessary to determine whether the eruption is an erythematous and vesicular dermatitis or is herpetic. In the former there would be an area of more or less well defined erythema in which would be found vesicles of various sizes. The herpetic eruption would be characterized by a group of vesicopapules, or vesicles on a markedly inflamed base. The skin between the papules might appear normal. The dermatitis would be apt to run an irregular course and end by disappearance of the erythema and exfoliation of the ruptured vesicles, whereas the herpetic vesicles would run a fairly definite course, each lesion undergoing spontaneous involution.

There appears to be no reason why a cosmetic dermatitis should occur before the menstrual period.

Radiotherapy would be of much value, whether the eruption is due to irritants or to the virus of herpes.

ANTITOXIN IN ANTITUBERCLE BACILLUS SERUM

To the Editor:—I should like to know the usual technical method for finding correct antitoxin amounts in antibacillary serum (T. B.).

G. ELIZONDO MARTEL, M.D., Cienfuegos, Cuba.

ANSWER.—The presence of a true toxin in the tubercle bacillus or medium of its growth (i. e., a toxin analogous to diphtheria toxin, eliciting the production of antitoxin on injection into a suitable animal) has not been established. Therefore it is impossible to determine the amount of antitoxin in antituberclе bacillus serum.

ASTHMA IN PALESTINE

To the Editor:—Will you please inform me whether the air of Palestine is advantageous to an asthmatic patient (of the bronchitic type)? There is no evidence of any anaphylactic etiology.

PHILIP I. LEVINE, M.D., Brooklyn.

ANSWER.—We understand that in summer in Palestine there is not only the extreme heat but the frequent prevalence of strong winds carrying much dust and sand, which are exceedingly irritating in character. It is doubtful, therefore, whether a stay in Palestine would be of any particular advantage to a person with asthma.

OINTMENT BASE FOR VAPORIZER MIXTURE

To the Editor:—I should like to know what ointment base would be most suitable for use in a vaporizer, containing camphor, menthol, eucalyptol and turpentine, and the method of preparation. Please omit name.

M.D., Rhode Island.

ANSWER.—Petrolatum is a suitable base. The camphor and menthol (1 per cent of each) are triturated until liquefied, the eucalyptol or turpentine (3 per cent) is added, and the mixture is incorporated with the petrolatum.

Council on Medical Education and Hospitals

COMING EXAMINATIONS

AMERICAN BOARD FOR OPHTHALMIC EXAMINATIONS: Montreal, Sept. 19. Sec., Dr. William H. Wilder, 122 S. Michigan Ave., Chicago.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY: The examination will be held in nineteen different cities in the United States and Canada, Oct. 22. Sec., Dr. Paul Titus, 1015 Highland Bldg., Pittsburgh.

AMERICAN BOARD OF OTOLARYNGOLOGY: Montreal, Sept. 17. Sec., Dr. W. P. Whegry, 1500 Medical Arts Bldg., Omaha.

ARIZONA: Phoenix, Oct. 3. Acting Sec., Dr. Jos. M. Greer, Professional Bldg., Phoenix.

CALIFORNIA: *Reciprocity.* Los Angeles and San Francisco, Sept. 21. Sec., Dr. Charles B. Pinkham, 420 State Office Bldg., Sacramento.

COLORADO: Denver, Oct. 4. Sec., Dr. William Whitridge Williams, 422 State Office Bldg., Denver.

CONNECTICUT: *Basic Science.* New Haven, Oct. 8. Prerequisite to license examination. Address, State Board of Healing Arts, 1895 Yale Station, New Haven.

IDAHO: Boise, Oct. 4. Dir., Bureau of License, Mr. F. L. Cruikshank, Boise.

MICHIGAN: Lansing, Oct. 11-13. Sec., Dr. Nelson McLaughlin, 1010 Maccabee Bldg., Detroit.

MINNESOTA: *Basic Science.* Minneapolis, Oct. 4-5. Sec., Dr. J. Charnley McKinley, 126 Millard Hall, University of Minnesota, Minneapolis.

MONTANA: Helena, Oct. 4. Sec., Dr. S. A. Cooney, Power Block, Helena.

NATIONAL BOARD OF MEDICAL EXAMINERS: The examinations in Parts I and II will be held at all centers where there are five or more candidates available for a class A medical school, Sept. 14-16. Ex. Sec., Mr. Everett S. Elwood, 225 S. 15th St., Philadelphia.

NEBRASKA: *Basic Science.* Lincoln, Oct. 4-5. Dir., Bureau of Examining Boards, Mrs. Clark Perkins, State House, Lincoln.

NEW HAMPSHIRE: Concord, Sept. 8-9. Sec., Dr. Charles Duncan, Concord.

NEW MEXICO: Santa Fe, Oct. 10-11. Sec., Dr. P. G. Cornish, Jr., 221 W. Central Ave., Albuquerque.

NEW YORK: Albany, Buffalo, New York and Syracuse, Sept. 19-22. Chief, Professional Examinations Bureau, Mr. Herbert J. Hamilton, 315 State Education Bldg., Albany.

OKLAHOMA: Oklahoma City, Sept. 13-14. Sec., Dr. J. M. Byrum, Shawnee.

PORTO RICO: San Juan, Sept. 6. Sec., Dr. O. Costa Mandry, Hospital Mimiya, Santurce, San Juan.

WISCONSIN: *Reciprocity.* Milwaukee, Sept. 13. Sec., Dr. Robert E. Flynn, 315 State Bank Bldg., LaCrosse.

WYOMING: Cheyenne, Oct. 3. Sec., Dr. W. H. Hassed, Capitol Bldg., Cheyenne.

Minnesota June Report

Dr. E. J. Engberg, secretary, Minnesota State Board of Medical Examiners, reports the oral, written and practical examination held at Minneapolis, June 21-23, 1932. The examination covered 12 subjects and included 60 written questions. An average of 75 per cent was required to pass. Thirty-two candidates were examined, all of whom passed. Five physicians were licensed by reciprocity with other states. The following colleges were represented:

PASSED		
College	Year Grad.	Per Cent
Northwestern University Medical School	(1930) 95.3, (1932)	90.1
Rush Medical College	(1932)	90.2
Indiana University School of Medicine	(1932)	89.4
State University of Iowa College of Medicine	(1929) (1930) 91.4, (1931) 89.4	94.3,
Johns Hopkins University School of Medicine	(1932)	88.2
University of Michigan Medical School	(1929)	93.4
University of Minnesota Medical School	(1931) 91.6,* 92,* 92.5, 93.2, (1932) 86.2,* 89,* 89,* 89.1,* 89.4, 89.6,* 90.4,* 90.6, 91, 91.1,* 91.3, 91.5,* 91.6, 92.2, 92.3	
Washington University School of Medicine	(1931)	88.3
University of Pennsylvania School of Medicine	(1929)	94.6
Marquette University School of Medicine	(1932)	88.5
University of Manitoba Faculty of Medicine	(1929)	91.5

LICENSED BY RECIPROCITY		
College	Year Grad.	Reciprocity with
University of Illinois College of Medicine	(1928)	New York
Washington University School of Medicine	(1930)	Missouri
John A. Creighton Medical College	(1916)	Montana
Jefferson Medical College of Philadelphia	(1927)	Michigan
University of Tubingen Faculty of Medicine	(1927)	New York

* These applicants have received their M.B. degree and will receive their M.D. degree on completion of an internship.

MEDICAL SOCIOLOGY IN THE MEDICAL SCHOOL CURRICULUM

JAMES PETER WARBASSE, M.D.
WOODS HOLE, MASS.

Our medical schools assume that the student admitted for medical education is already possessed of an adequate general culture. The schools rapidly engross the student in medical learning and proceed to carry him along in a transport of enthusiasm toward the goal of medical practice. He is, as it were, sequestered for four years from the rest of life and absorbed in the monastic seclusion of medicine.

This study in itself provides exceptional cultural value. Every man who pursues the course in medicine offered by our modern medical schools is bound to absorb a culture which is inherent in the pursuit of scientific knowledge. But the dominant purpose in the study of medicine is the perfecting of the medical technician; and it is to this end that the student addresses his energies.

In this age of the supremacy of commercialism, the medical student, as his studies approach the time when he must go out into the world and make his way, has to think of commercializing his knowledge. He wants a good medical education because it will win for him good economic rewards. This is natural and wise. The doctor must think about making money, because it is with money that he is going to surround himself with the best equipment and provide a home and the best advantages for his family. It is a notorious fact that, when the mind is fixed upon a means to attain an end, the means becomes the bright object of the desires, and the end often remains obscured in the clouds of misty uncertainty.

The competitive struggle into which the young practitioner is thrown is in a business world. Concern need not be felt so much for those men of fine quality who hold their calling in such esteem that the rewards of medical practice come naturally as a tribute to their superiority. But concern must be felt for that great mass of doctors who proceed to make their way by sheer business methods.

On every side, not only in the cities but in the country districts too, is heard the lament of the commercialization of medicine. No advantage can come from its denial. It is rampant and conspicuous. It is not wholly the fault of medicine or of medical education; it is inherent in the nature of the society in which we live. It is an evil, perhaps, less in evidence in the medical profession than in any of the other useful occupations —but it is in evidence, to our discredit.

Medicine is both an art and a business. But the shining art of medicine suffers eclipse by the dull routine of business. The medical schools are, perhaps, taking for granted too much of the cultural background of the students and expecting too much from the cultural virtue of the study of medicine itself. This virtue, unless well fortified, has some rude shocks awaiting it when it goes out into the world of business competition.

Is it not possible that in the medical school the students get an overdose of technological training and become surfeited with undiluted medicine, when their studies might profitably be sweetened with a subject that correlates all departments and broadens the view from the narrow picture of disease to the larger scene of all society?

Might not the medical school improve the quality of its graduates by adding to their training, as medical technicians, a medical culture aimed to impress the students with an understanding of medicine as an art and give to the doctor a broad social conception of his relation to humanity?

In a recent address, President Angell of Yale University spoke of the study of medical sociology as so useful that "it may be that we shall have to create one or more new chairs to deal with these problems" in our schools of medicine.

A few of our colleges have a chair of medical history. Many assign some member of the faculty to give a course of lectures on this subject. European universities have carried this branch of teaching further than we. But the value of medical history resides in its sociological implications. The best is not gotten out of the subject by presenting its bare facts, as names, dates, events and places. That was the method once employed in teaching geography, botany and anatomy. These are now made living subjects and linked with the other departments of learning and life. Medical history can be treated in the same way.

The Long Island College of Medicine, in New York, has established a required course with this object in view. It is to begin in the term of 1932-1933. Medical history is used simply as a scaffolding on which to erect a structure of the social relations of medicine. On this are built medical philosophy, medical ethics and medical economics, all parts of the larger façade of medical sociology. The medical history of all time is interpreted in its relation to the problems of present-day life and to the facts of medical practice. What has gone before in the development of the science of medicine illuminates the philosophical, ethical, and economic aspects of the medicine of today.

It is aimed to give the students a broader understanding of their art. The course includes a discussion of the biologic basis of medicine; medicine among lower animals; animal treatment of animal ills; medical aid as a natural accompaniment of the survival of species; the primitive healer, the priest, the medicine man, and witchcraft; the Aesculapian legend; the help of the gods; astrology and alchemy; the truths hidden in tradition, quackery and pseudoscience; facts sleeping in the lap of fiction; scientific curiosity; the power of tradition; health and morals; curiosity; expediency and bedside manners; the difference between law and medicine; humoral physiology, the precursor of the hormones; the hazards of wishful thinking; the philosophy of medicine.

Paracelsus illustrates bombastic medicine; Servetus, the conflict between science and tradition; Vesalius, the price of prosperity; Leeuwenhoek, the joy of seeing things never before seen; Paré, the doctor himself as the healing agent; Priestly and Dalton, exact observation; John Hunter, the relationship of all sciences; Jenner, utilitarian discoveries and their obligation to pure science; Corvisart, prestige and honesty; Simpson, overcoming intolerant opposition; Semmeleweis, Pasteur and Lister, the great benefactions; Koch, how to know a fact; Osler, the exemplification of medical culture. These subjects give some idea of the interpretive possibilities of this course.

Connected with the historical background of medicine are the salient affairs of the doctor's life today. These call for discussion of medicine as a social science; the sick cell, the sick man, the sick society; the doctor as philanthropist; quackery, secrets and patents disavowed; the rewards and compensations of medicine; the meaning of success.

Finally, the physician perfecting himself in order to attain the great satisfactions; the physician's duty to himself; medicine as an art, science, profession and business; the unity of doctors; the medical guild; the medical society; the doctor's contacts with the community—individual competition, group experts, state medicine, guild statism, consumers' cooperation—their advantages and disadvantages; what is happening to the medical profession in the absence of its own planning to meet the exigencies of a radically changing society; a plan of medical organization adapted to the needs of the doctors and the times; preserving the doctor as a free individual in a mechanized age.

These are hints of the possibilities of a course of instruction on medical sociology for medical students, based on the history of medicine. Such a course, interspersed in the midst of the strenuous grind of education, may mellow and mollify the acerbities of technical training and help the doctor to view his profession as an art. It is possible that such a course may prepare the physician to live in better harmony with his colleagues, to serve more efficiently the society in which he lives, to be a more effective doctor, and finally to find greater satisfactions in the practice of his profession.

Book Notices

Neoplasms of Domesticated Animals. By William H. Feldman, D.V.M., M.S., Division of Experimental Surgery and Pathology, the Mayo Foundation, Rochester, Minnesota. With a foreword by Charles H. Mayo, M.D. Mayo Clinic Monographs. Cloth. Price, $6. Pp. 410, with 193 illustrations. Philadelphia and London: W. B. Saunders Company, 1932.

The study of animal tumors has assumed great importance in recent years owing to the demonstration of the transmissibility of the malignant neoplasms occurring spontaneously in albino mice and rats. Of late, the discovery of a peculiar sarcoma of the fowl has interested investigators on tumors because this growth is transmissible by cell-free filtrates. This property has been used as a basis for far reaching but as yet unsubstantiated theories concerning the possibility of a parasitic origin of human growths. However, this property of filtrability seems to be wholly confined to tumors of the fowl. Interesting tumors in guinea-pigs and rabbits are also being studied. Such investigation has led to renewed interest in the morphologic examination of the great variety of neoplasms frequently found in other domesticated animals, and it is now clear that practically all the tumors that occur in human beings may be found in animals. Most of the information on the subject, with the exception of the well known volume by Woglom on experimental cancer, published in 1913, has been either in a foreign language or in veterinary journals not readily accessible to the physician. This collection of nearly all that is known concerning natural history of animal tumors is therefore of great value. The illustrations are reproductions of photographs of gross material and photomicrographs of the histologic details of the neoplasms. Each chapter is followed by an ample and accurate bibliography, and there is a competent section on methods of preservation of pathologic material. For those who are working with animal tumors it is an invaluable source book and should be in every pathologic laboratory.

A Text-Book of Surgical Pathology. By Charles F. W. Illingworth, M.D., F.R.C.S., and Bruce M. Dick. Cloth. Pp. 677, with 290 illustrations. London: J. & A. Churchill, 1932.

The evaluation of this book offers certain difficulties. If its purpose is to supply a purely practical and relatively elementary outline in surgical pathology, as indeed it would appear from the preface, its object is well attained; if it is to offer an insight into the more fundamental problems that face the surgeon—inflammation, wound healing, resistance, tissue dysfunction, the state of the circulation—the book is of little value. Organ pathology is presented in twenty-six well written, well illustrated and properly balanced chapters. As such it reflects the point of view of the surgeon as a mechanist and of the pathologist who seeks to confine his interests to that level. Surgery today has advanced far beyond this simple concept, though there is little to indicate this in the text. The little that is offered seems superficial and haphazard. Thus the book opens with three pages on surgical shock, two on burns, nine on tuberculosis. Then follow four on actinomycosis, four on gas gangrene (the heading is "aerogenic infection" obviously a misnomer) and nine of echinococcus disease. The array is rather motley and of totally unequal value whether from the practical or from the scientific point of view. It might reasonably be supposed that the subject of inflammation would deserve some consideration, but of this there is no mention. Obviously the book has its limitations.

Technique de l'ostéosynthèse: Etude de quelques procédés. Par Robert Danis, professeur de clinique chirurgicale à l'Université de Bruxelles. Paper. Price, 55 francs. Pp. 161, with 149 illustrations. Paris: Masson & Cie, 1932.

This book is presented largely from the author's laboratory and clinical experience. A number of rules to be followed in performing a successful operation on fractures are given and emphasis is placed on unnecessary freeing of the fragments. Immobilization after operation is stressed, especially when a foreign body has been used. A rather complicated but apparently useful operating table has been devised for various operations on the extremities and also for holding the patient in difficult positions for other operations. A number of instruments are described for holding bone fragments and for inserting and tightening wire sutures. The author is enthusiastic regarding the use of multiple wire sutures for the fixation of bone fragments. He describes numerous plans for wiring the ends of fractured bones. A few typical cases are reported, but infection, which developed about the wires in a number of these, necessitated their removal. Occasionally bone infection occurred but the result eventually seemed to be good. In badly comminuted fractures the author uses a special wire screen wrapped and reenforced with wire around the fragments. The method of making and the use of an autogenous bone graft and bone screws for fixation are described. The graft is cut from the crest of the tibia but is rarely used except in bridging a defect or in a severe pseudarthrosis. Early use of the extremities is hastened by the support of a specially made celluloid splint laced up on one side so that it may be tightened as necessary. The necessity for open operation on certain fractures difficult to reduce and maintain is well known, but the frequent use of multiple perforating wire sutures and a large amount of foreign material can scarcely be sanctioned. In general, screws or even plates are less likely to infection and certainly far easier to remove. Osteomyelitis resulting from perforating wire sutures is particularly difficult to cure, and the wire itself is often difficult to remove. The book may be read for its original suggestions in the technic of application of wire sutures and screws.

Strahlenbehandlung bei Hautkrankheiten: Licht, Radium, Röntgen- und Grenzstrahlen. Ein Lehrbuch für Studierende und Ärzte. Von Dr. Franz Blumenthal, a. o. Professor an der Universität, stellvertr. Direktor der Universitäts-Hautklinik in Berlin, und Dr. Lothar Böhmer, Assistent der Hautklinik in Berlin. Second edition. Paper. Price 15 marks. Pp. 274, with 128 illustrations. Berlin: S. Karger, 1932.

Since the first edition of this manual appeared in 1924 there have been many constructive developments in radiation therapy. The biology and physics of light, radium, roentgen rays and grenz rays are discussed in a thoroughly scientific manner, with appropriate illustrations of the various modalities in modern usage. The important subject of dosage, both qualitative and quantitative, is adequately covered. In the biologic-clinical section the changes produced in the skin by irradiation are discussed in addition to the technic of treatment as applied to different dermatologic disorders in the light institute of the Berlin University skin clinic. The authors are to be congratulated on having condensed a large amount of valuable material into a small volume that will be of great interest to dermatologists and radiation therapists.

Tuberculose osseuse et ostéo-articulaire. Par Etienne Sorrel, chirurgien de l'Hôpital Trousseau, et Mme. Sorrel-Dejerine. Fascicules I et II. Cloth. Price, 380 francs. Pp. 514, with 640 illustrations. Paris: Masson & Cie, 1932.

These atlases on bone and joint tuberculosis were written by Sorrel and his wife. The books constitute a summary of lectures that have been given twice each year during Sorrel's long residence at the Maritime Hospital at Berck to French and foreign physicians. Chapter I includes tuberculous osteitis as it occurs in the large and small long bones, and in the short and flat bones; chapter II includes or discusses tuberculous osteartritis of the upper extremities; viz., the wrist, elbow and shoulder of the child and adult; chapter III, tuberculous osteartritis of the lower extremities and the sacro-iliac joints, and chapter IV, tuberculous osteartritis of the spinal column. There is a discussion of Pott's disease as it occurs in the child and the adult and infection of the posterior portions of the vertebrae; viz., the posterior arch, spinous process, transverse process and vertebral articulations. The author's views on the treatment of Pott's paraplegia are well known. The illustrations include roentgenograms, line drawings and diagrams of operations. These include the operative treatment of spina ventosa, resection of the wrist, elbow, shoulder and mediotarsal joint, astragalectomy, resection of the knee and the hip, the technic of extra-articular arthrodesis of the hip, the Albee spine operation, the osteoperiosteal graft and the Hibbs operation. Especially noteworthy are the illustrations of amputations, astragalectomy and sequestrectomy by Frantz. There are instructive diagrams of the pathologic anatomy of tuberculosis of the knee and hip. The work of the publishers is good. These books should be looked over, even if not read, by evey orthopedic surgeon and roentgenologist.

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Die Anamnese. Psychologie und Praxis der Krankenbefragung. Von Prof. Dr. Georg Grund, Direktor der Medizinischen Univ.-Poliklinik in Halle a. S. Boards. Price, 12 marks. Pp. 242. Leipzig: Johann Ambrosius Barth, 1932.

This book is much more than a simple manual of history taking. It is introduced by the author with the statement that the art of taking a medical history, which is more difficult to learn than most methods of investigation of the patient, has lost ground with the introduction of so many new methods of examination, and he makes a plea for recognition of its true worth and importance and for proper emphasis on it in both the teaching and the practice of medicine. The author attributes the common neglect of the teaching of history taking in part at least to the fact that there has never been an adequate compilation of current knowledge on this subject, and this book represents his attempt to fill what he regards as a real need. After an introduction which covers the general principles and psychology of history taking the book is divided into two main parts, the history being regarded from the standpoint of symptoms and from the standpoint of etiology. The general method followed is that of describing such symptoms as are related by or as may be elicited from the patient, and of pointing out the possible connection of the patient's story with pathologic changes. This method is used successfully, and the exposition is exhaustive, clear and concise. A similar method is used in the review of the history from the standpoint of etiology. There is a chapter on the elucidation of psychogenic factors in the etiology of the organic manifestations of disease, and in discussing symptoms as related by the patient attention is constantly called to the possibility of their psychic origin. The book would perhaps have been strengthened by a section devoted specifically to the neuroses, both on account of their importance in producing symptoms and on account of the importance of the history in making the diagnosis of neurosis. On the whole, the book is well worth while for any physician who wishes further to cultivate the art of history taking in himself or in his pupils, and it should serve a useful purpose in redirecting attention to what may be in some danger of becoming a lost art.

La Escuela Médica Peruana: Por los senderos de Unánue. Por Prof. C. E. Paz Soldan. Biblioteca del Centenario de Hipólito Unánue. Paper. Pp. 186. Lima: La Reforma Médica, 1932.

This anniversay volume, a tribute to Hipólito Unánue, founder of the country's first medical school, deals with the past, present and future of medical education in Peru. The first section, which is of greatest interest, unfolds the panorama of the development of medical practice during the colonial era, and especially the establishment of hospitals as charitable institutions. The heroic efforts of Unánue at the beginning of the nineteenth century are vividly portrayed. Then follows a cursory description of the vicissitudes political, economic and educational, culminating in the merger with the University of San Marcos. The second section deals with the "convulsive" decade, 1919-1929, when the students were in revolt and all the activities of higher education were in abeyance. After discussing the causes of the recent débâcle the author takes up the problems of the future, expounding a neat and logical plan of organization and reglementation. To those interested in the educational developments "below the line," the book will prove a valuable guide.

Lectures on Psychiatry. By E. D. Wiersma, M.D., Professor of Psychiatry and Neurology, Groningen. Cloth. Price, 25/-. Pp. 610, with 143 illustrations. London: H. K. Lewis & Company, Ltd., 1932.

As the author states in his preface, the lectures on psychiatry are theoretical lectures. The individual mental diseases and their etiology, prognosis and therapeutics are touched on either not at all or only incidentally. The lectures are to a great extent studies in psychopathology and were delivered at the University at Groningen, where Dr. Wiersma occupied the chair of neurology and psychiatry for more than thirty years. Believing that neurology and psychiatry are two closely related subjects, the author is not in favor of having these subjects taught by different teachers. He fears that such a division of the two subjects may give a too one-sided development toward the neurologic or psychiatric side. With only a passing review of the teachings of Freud, Adler and Young, the organic basis of abnormal mental reactions is studied in extenso. In chapter I the intimate connection between the phenomena of consciousness and material processes is pointed out. In chapter IV a study of the relationship between bodily build of the races and constitution types to a given psychic structure is made. "A presumption is justified" that from the shape of the body a function appropriate to it may be predicted. Chapters V, VI, VII, VIII and IX are given to the study of consciousness, degrees and extent of consciousness and its determination. An excellent study of memory disturbances, disturbances in thinking and dementia is given in chapters XII, XIII, XIV and XV. In chapter XIX, under the caption of "Manifestations of the Will" a detailed psychologic interpretation of reflexes is made. An agreement is found between conscious manifestation of the will and reflexes as it is seen in the correspondence between reaction time and reflex time. Automatisms and instinctive and impulsive actions are elucidated. In the last chapter, apraxias, aphasias and dysarthrias are discussed as manifestations of volitional disturbances.

Contribution à l'étude du traitement des fractures ouvertes de jambe. Par le Dr. Louis Darfeuille. Paper. Pp. 170, with illustrations. Paris: Librairie Arnette, 1932.

The authors state that, according to the statistics, all methods have given variable results. Closed synthesis, although having a 1.7 per cent mortality and favorable results in 80 per cent of the cases, cannot be regarded as the treatment of choice in all cases of compound fractures. There is, however, no uniform or universal treatment of fracture of the lower leg. Of the various types of technic from which the surgeon may choose, he must be guided in the individual case by the degree of anatomic displacement and the time that has elapsed since the accident.

The History of Taste: An Account of the Revolutions of Art Criticism and Theory in Europe. By Frank P. Chambers. Cloth. Price, $4.25. Pp. 342, with 12 illustrations. New York: Columbia University Press, 1932.

The author consulted medieval writers for their views and opinions on architecture, sculpture and painting executed in their own time and then traced the changes during the Renaissance through the period of the romantic movement and the revivals of the last century. Apparently the views of mankind change greatly under various circumstances and among various peoples. The author is convinced that there is a kind of destiny in taste—a cycle as it were—which no man controls and in which some deeper historical significance may be sought. The volume is magnificently printed and beautifully illustrated and might well form a model for publishers of other semi-scientific workers.

Fleckfieber und Nervensystem. Von Dr. Nikolai Hirschberg. Sonderausgabe von Heft 66 der „Abhandlungen aus der Neurologie, Psychiatrie, Psychologie und ihren Grenzgebieten." Paper. Price, 11.60 marks. Pp. 124. Berlin: S. Karger, 1932.

In typhus fever the nervous system is affected with remarkable regularity. Though it causes also a number of somatic disturbances, these are neither clinically nor pathologically so prominent and important as the nervous complications. It also gives rise to a number of curable, transient psychoses and therefore is remarkable also for the absence of sequelae which are so common after another infection of the central nervous system known as epidemic (lethargic) encephalitis. Rare and practically unknown in this country, typhus fever is prevalent in Europe. During the Great War it swept over Russia, Poland (epidemic of 1918-1919), some provinces of the former, Austria and the Balkan countries and the military camps of the warring nations. An enormous opportunity presented itself to clinicians and research workers to study the disease from various angles. Their vast experience has been faithfully recorded by Hirschberg, who devotes 13 pages to pathology and the rest of the book to the clinical features and the bibliography of 275 articles. The nerve lesions are covered minutely. The peripheral nerves, sympathetic nervous system, spinal cord and various parts of the brain are taken up separately. As there is hardly a portion of the central nervous system that is not involved in this disease, the monograph is a short but lucid review of the most interesting phases of neurology, including, for instance, the chapters on the extra-

pyramidal system and the rôle of the sympathetic system in the causation of various cerebral disorders. It is of additional value because of the rich personal experience of the author and the liberal references to the Russian literature, valuable but hardly accessible.

La créatinisémie. Par Dr. Maurice Dérot. Paper. Pp. 238. Paris: Librairie Médicale Marcel Vigné, 1932.

Dérot reports studies on the creatinine concentration of serum on patients and experimental animals. He used Folin's method and found creatinine elevated in acute and chronic nephritis and other disease associated with renal lesions. In dogs and rabbits, elevated serum creatinine was brought about by nephritis produced by bismuth, mercuric chloride, and diphtheria toxin, as well as bilateral ligation of the ureters or bilateral nephrectomy. He feels that creatinine determinations are of definite help in nephritis but should be used in conjunction with urea determinations. The book contains little new. The author mentions, but does not answer, the objections to the Jaffé reaction and assumes that the error is of no clinical importance.

The Mongol in Our Midst: A Study of Man and His Three Faces. By F. G. Crookshank, M.D., F.R.C.P. Third edition. Cloth. Price, 21s. Pp. 539, with illustrations. London: Kegan Paul, Trench, Trubner & Company, Ltd., 1931.

This is the third edition of a volume which attracted wide attention when it first became available. Dr. Crookshank is not so much concerned with the imbecile mongoloid as with non-racial mongolism. He comes to no definite conclusion as to the significance of the mongol but he does say that if we could finally discover the real cause for the presence of mongolism in our midst we should know not merely what God and man are but how they both came to be. In reaching this conclusion he traces all the views of evolution of man that have held public interest since the darwinian view first startled the world.

Miscellany

TAXING ANTIVIVISECTION BEQUESTS

Following is an opinion of the United States Board of Tax Appeals in the case of the Pennsylvania Company for Insurances on Lives and Granting of Annuities versus the Commissioner of Internal Revenue, promulgated, April 18:

The respondent has proposed an additional assessment of estate tax in the amount of $17,657.56. The only issue is whether a bequest to the American Anti-Vivisection Society of Philadelphia is exempt from estate tax under the provisions of section 303 (a) (3) of the Revenue Act of 1924. The parties have entered into certain stipulations which the board accepts and incorporates in this report by reference.

So far as pertinent to this proceeding, section 303 (a) (3), which governs the issue here, is as follows:

> For the purpose of the tax the value of the net estate shall be determined—
>
> (a) In the case of a resident, by deducting from the value of the gross estate . . .
>
> (3) The amount of all bequests . . . to or for the use of any corporation organized and operated exclusively for . . . the prevention of cruelty to . . . animals . . ."—*Revenue Act of 1924.*

The Commissioner's regulation for the administration of the above provision in Regulations 68 (1924) is as follows:

> *Religious, charitable, scientific, and educational corporations.* A corporation or association to which such a bequest was made must meet three tests: (1) It must be organized and operated for one or more of the specified purposes; (2) it must be organized and operated exclusively for such purpose or purposes; and (3) no part of its net earnings shall insure to the benefit of private stockholders or individuals.—*Regulations 68 (1924 Ed.)*

The American Anti-Vivisection Society is a Pennsylvania corporation chartered May 1, 1883. Its purposes as set out in the original character were to restrict the practice of vivisection within proper bounds and to prevent the injudicious and needless infliction of suffering on animals under the pretense of scientific and medical research. On May 23, 1885, the charter was amended by changing the name of the corporation to American Society for the Restriction of Vivisection. On May 15, 1889, it was again amended to declare the purpose of the society to be "the total abolition of all vivisectional experiments on animals and other experiments of a painful nature" and the name was changed to American Anti-Vivisection Society.

The American Anti-Vivisection Society engages in various activities to effect the purposes for which it was organized. It gives rent free use of certain rooms to the Animal Rescue League and contributes to the expense of that organization, which takes off the streets of Philadelphia animals that in some cases might find their way into vivisectional laboratories. It provides for free lectures and uses billboard advertising space in its propaganda work against vivisection. It publishes a monthly magazine in which there are always some articles on the cruelty of vivisectional experiments. It has kept a man near the laboratories of the University of Pennsylvania to learn whether stolen dogs were delivered to the kennels of that institution and has sent notices to owners advising them to look out not only in the city pound but in the vivisectional laboratory for missing animals.

Vivisectional experiments are conducted in various research laboratories maintained by publicly supported and/or privately endowed medical schools and endowed foundations throughout the world. The Rockefeller Institution, a research foundation engaged in investigating the causes and cures of human diseases, especially cancer, maintains its own vivisection laboratory. Similar work is done in the medical and biological departments of many of the great universities, such as Johns Hopkins of Baltimore, Pennsylvania of Philadelphia and many others throughout the country.

Under the laws of most of our states and of many countries, cruelty to animals is an indictable offense, subject on conviction to heavy penalties. Societies to assist the authorities in the enforcement of such laws have been established in many jurisdictions. Such organizations have done much to relieve animals from needless suffering inflicted by careless or cruel owners and others. Recognizing the social value of such work, Congress included the exemption provision here relied on in the Revenue Act of 1924. It has been held, however, that legislation to prevent cruelty to animals is not based on consideration for animals or recognition of man's obligation to treat them decently, but on the theory that such cruelty is "an offense against public morals which the commission of cruel and barbarous acts tends to corrupt." *Commonwealth* v. *Turner*, 145 Mass. 296; 14 N. E. 130.

The courts have had many occasions to discuss and define cruelty, but our research fails to disclose any material variation from Webster's definition, that it is "disposition to give unnecessary pain or suffering to others; inhumanity, barbarity; . . . inhuman treatment; act of wilfully causing unnecessary pain." In conformity with this definition the courts have very generally held that cruelty in a legal sense is wilful, wanton and unnecessary infliction of pain. It is cruel to let loose a captive fox to be harried by hounds for gratification of human spectators, *Commonwealth* v. *Turner*, *supra*, or to kill or maim live pigeons that have been kept in captivity. *Waters* v. *People*, 23 Colo. 33; 46 Pac. 112. Cf. *State* v. *Porter*, 112 N. C. 887; 16S. E. 915. On the other hand, the same courts have held that the statutes against cruelty to animals should not be construed to prevent killing game in its wild state.

The domestic use of animals requires many painful operations, none of which have ever been forbidden by legislation or denounced by the courts as cruel acts. Dehorning domestic animals inflicts great suffering; but it is not only tolerated but is very generally practiced and, in Pennsylvania, it has the sanction of the legislature and the courts. Act. Pa. 1895, from 25 P. L. 286. Breaking, branding, marking, punishing, working, docking, castrating, spaying and caponizing are ordinary incidents in keeping animals to supply food or render service to man. Such operations must cause intense pain and suffering and certainly are not for the benefit of the animals but they have never been legally outlawed or even stigmatized as cruel, inhuman or barbarous by legislation or judicial decisions. Usage and law tolerate, permit and even encourage, and in some instances require such operations with the single limitation, not always too strictly observed, that they must be done with a minimum of suffering for the helpless creatures dedicated by age old custom to man's necessities.

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Within the meaning of the law every living creature, except man, is an animal and all are either the friends or foes of human beings. Throughout all history it has been necessary and therefor laudable to exterminate the animal enemies of humanity. Snares, traps, arrows, guns, poison, fire, parasites and countless other lethal agents and deadly devices have been used to protect man, his health and property from the menaces and depredations of noxious beasts, birds, reptiles and insects. For this purpose killers have been subsidized by the nations and the states and all the agencies of science have been enlisted. Municipalities vote bounties to encourage this warfare. Even the Congress appropriates the revenues for the extirpation of weevils, grasshoppers, fruit flies and other pests that threaten the prosperity and well being of the people. Without question this never ending conflict between man and the so-called lower forms of life has caused dreadful pain and suffering to countless sentient beings; but man's necessity knows no higher law than self preservation and must be served.

The prevention and cure of human diseases are only other phases of man's struggle to survive and are no less necessary than the conquest of visible and powerful enemies. From the dawn of history until within the very recent past, mankind has been ravaged by epidemics of contagious and infectious plagues. The migrating pests of the early and middle ages, Asiatic cholera, yellow fever, syphilis and smallpox destroyed millions of lives and impoverished whole countries of happiness and prosperity before they were vanquished by dauntless men who gave their time, talent and, in many instances, their own lives to human service in the laboratories of the scientific world. Vivisection has long been considered a vitally essential investigative method in physiology, pathology, biology and curative medicine and surgery. Cerebrospinal meningitis, long regarded as practically incurable, has been conquered by an antitoxin discovered in the vivisectional laboratories of the Rockefeller Foundation and has reduced the mortality of that scourge from more than 75 to less than 25 per cent. In the experimentation which developed that antitoxin, 100 guinea-pigs and 25 monkeys were sacrified to human necessity, but for each monkey or pig so used there are today scores of sound human beings who have been restored to health and the service of their families and society by the necessary use of lower animals in the interest of mankind.

Following the discovery of America and for more than 400 years, syphilis and its sequalae in many forms ravaged the nations of the western world. This scourge, so contagious and insidious that it baffled medical science and caused untold suffering and shame to innocent and guilty alike, has been conquered within our own generation by the scientist Ehrlich, who discovered his famous specific after seven years of vivisectional experimentation and the trial and rejection of more than 700 alleged remedies. Space forbids more than the mention of similar results in the prevention and treatment of diphtheria, hydrophobia, tuberculosis, typhoid, and many other diseases that have yielded, or are yielding, to the attacks of science. The results already attained promise much for the future. Cancer, said to kill one person of every eight who dies after the age of 40, remains unconquered. If its germ is ever identified, and its cure determined, the vivisectional laboratories must, in all probability, render that service to humanity.

Experimentation on living animals in the interest of medical progress has been endorsed with singular unanimity by learned societies and associations devoted to the curative arts and the advancement of science. On Aug. 12, 1913, the International Medical Congress, composed of distinguished members of the profession from every civilized country in the world, without a dissenting vote approved the following resolution:

> That this Congress records its conviction that experiments on living animals have proved of the utmost service to medicine and are indispensable to the future progress. That, accordingly, while strongly deprecating the infliction of unnecessary pain, it is the opinion, alike in the interest of man and animals, that it is not desirable to restrict competent persons in the performance of such experiments.

To the like effect are resolutions adopted by the British Medical Association in 1892, and the American Medical Association and the American Association for the Advancement of Science in 1908. These resolutions represent the collective opinion of the medical profession of all countries. On the other hand, extensive research has failed to disclose a single adverse resolution of any scientific body.

For more than two generations, vivisectional experiments have had the unqualified endorsement of the most distinguished investigators. In a letter written April 14, 1881, Charles Darwin said:

> On the other hand I know that physiology can make no progress if experiments on living animals are suppressed and I have an intimate conviction that to retard the progress of physiology is to commit a crime against humanity. . . . Unless one is absolutely ignorant of all that science has done for humanity, one must be convinced that physiology is destined to render incalculable benefits to man and even to animals. See the results obtained by M. Pasteur's work on the germ of contagious diseases; will not animals be the first to profit thereby? How many lives have been saved, how much suffering spared by the discovery of parasitic worms following the experiments made by Virchow and others on living animals!

As far back as 1863, Claude Bernard, one of the greatest scientists of that day, wrote:

> You ask me what are the principal discoveries due to vivisection. . . . All the knowledge possessed by experimental physiology can be quoted in that connection; there is not a single fact which is not the direct and necessary consequence of vivisection. From Galen, who, by cutting the laryngeal nerves, learnt their use for respiration and the voice to Harvey, who discovered circulation; Pecquet and Aselli, the lymphatic vessels; Bell and Magendie the nervous function, and all that has been learned since the extension of that method of vivisection, which is the only experimental method; in biology, all that is known on digestion, circulation, the liver, the lymphatic system, the bones, development —all absolutely is the result of vivisection, alone or combined with other means of study.

Apparently it is the contention of the petitioner here that Virchow, Bernard, Darwin, Pasteur and the host of less distinguished servants of humanity who have contributed so much to the well being of mankind by their great discoveries, instead of praise for their beneficial achievements, merit censure for the use of living animals. We cannot adopt such a view. To abolish vivisection would greatly retard the progress of preventive and curative medicine. It would stop the use of animals for the development of all the serums now used to immunize against disease or to relieve and cure after infection. The health and strength of its people are a nation's greatest asset. To adopt the views of antivivisectionists would deprive medicine of one of its most effective agencies of investigation and force a return to empirical and observational methods which, however valuable, fall far short of the demands of humanity. To grant the prayers of the petitioner here would require the government to contribute to the cost of a movement inimical to the safety and health of the people, a result that we think was not contemplated by Congress.

In our opinion vivisection does not come within the legal meaning of cruelty to animals. It is a method of research necessary to human welfare. Such pain or suffering as may result therefrom is not wilfully or wantonly inflicted. We conclude, therefore, that the American Anti-Vivisection Society is not operated exclusively to prevent curelty to animals and so is not entitled to the benefits of section 303 (a) (3) of the Revenue Act of 1924.

Reviewed by the Board.

Decision will be entered for the respondent.

STERNHAGEN and MURDOCK, concurring: When the Board concludes, as it properly and correctly does, that vivisection is not necessarily cruelty to animals within the meaning of the statute, the ground for the decision is complete. It is, in our opinion, unnecessary and probably improper to consider the general wisdom of vivisection, and we therefore refrain from participation in the discussion of that question.

SMITH, dissenting: In my opinion the deduction of the bequest to the Anti-Vivisection Society of America is authorized by the statute. Section 303 (a) (3) of the Revenue Act of 1924 provides for the deduction from the gross estate of "The amount of all bequests . . . to or for the use of any corporation organized and operated exclusively for religious, charitable, scientific, literary, or educational purposes, including the encouragement of art and the prevention of cruelty to children or animals. . . ." The statute is concerned only with the "purpose" for which the corporation was organized and operated. The discussion in the majority opinion as to whether the practice of vivisection is in a legal sense a cruelty to animals

or beneficent to mankind goes beyond the necessities of the case. The evidence pertaining to the organization and operation of the American Anti-Vivisection Society seems to me to indicate clearly that its purposes and practices were directed generally toward prevention of cruelty to animals. I think that the bequest is deductible.

Medicolegal

Quo Warranto Proceedings to Test Right to Practice

(State ex rel. Biggs v. Higbee (Ala.), 138 So. 819)

Under the laws of Alabama, quo warranto proceedings may be brought in the name of the state against a person practicing any profession requiring a license or certificate or other legal authorization, calling on him to show by what right or warrant he is practicing. If he fails to produce a license, certificate or other authorization, he may be barred from further practice (section 9932, Alabama Code, 1928). Such proceedings were instituted against the respondent, Higbee, to prevent his treating or offering to treat diseases of human beings without first having obtained a certificate of qualification from the state board of medical examiners. Evidence showed that he had treated patients by massage, electricity, heat and a salve, and the state requested the court to charge the jury to find the respondent guilty if it believed the evidence. This the court declined to do, and an exception was noted. Verdict and judgment were given in the respondent's favor. If Higbee had been prosecuted criminally, such a verdict and judgment would have ended the case, for he could not have been tried again for the same offense. In quo warranto proceedings, however, an appeal is possible, and the state appealed to the Supreme Court of Alabama.

The statute requiring examination of persons undertaking to treat diseases of human beings, said the Supreme Court, covers every form of treatment. It is conceded that the respondent is no doctor; that he is not a chiropractor and that he condemns the practice of chiropractic; that he is no surgeon; that he is no osteopath. The statute, however, does not include only the classes named; it reaches out and includes persons who would treat the ills of human beings by any system whatsoever. It includes those who treat diseases by the system known as mechanotherapy, sometimes called the movement cure. The statute is all inclusive where any system or cure is offered to relieve human diseases. Conceding even that the state was not entitled to have the trial court direct a verdict in its favor, nevertheless the verdict of the jury was contrary to the great weight of the evidence, and the trial court, on motion of the state, should have set the verdict aside. The judgment of the trial court was reversed and the cause remanded for a new trial.

Workmen's Compensation Acts: Refusal of Widow to Permit Autopsy No Bar to Compensation.—The Tennessee workmen's compensation act (Public Acts, 1919, chapter 123, section 25) provides that when the cause of death is obscure or disputed, any interested party may require an autopsy at his own expense. This confers on the employer a right to have an autopsy performed, which he may enforce by proper proceedings and order of the court before which a petition for compensation is filed. There is, however, says the Supreme Court of Tennessee, no provision in the statute making a refusal on the part of the widow to permit an autopsy a bar to her recovery of compensation.—*Lenoir Car Works v. Hill (Tenn.), 44 S. W. 321.*

Wills: Lay Testimony as to Testator's Mental Capacity.—The testimony of laymen as to the mental capacity of a testator and their opinions concerning it are admissible in evidence if the witnesses were well acquainted with the testator and had opportunities to observe him and to form an opinion. If the witnesses do not state facts, or if the facts related and the circumstances proved by them do not constitute evidence of mental incapacity, the opinions of such witnesses do not furnish evidence sufficient to justify the submission of the case to the jury. The fact that the testator was an epileptic is not sufficient to establish mental unsoundness, disqualifying him from making a will, in the absence of expert testimony describing its extent and its effect on his mind and showing that the disease deprived him of his mental capacity to execute a will.—*Bodine v. Bodine (Ky.), 44 S. W. (2d) 840.*

Evidence: Use of Medical Books in Cross-Examining Medical Experts.—The authorities, according to the Supreme Court of Oregon, are apparently hopelessly at odds as to how far counsel, in cross-examining an expert, may use the works of authors recognized as standard authorities by the witness and by the profession to which he belongs. The weight of authority is that it is error for counsel to read to his medical witness in his direct examination extracts from a standard medical work, and then to ask him whether what was read corresponds with the witness' own judgment. On cross-examination, however, when a medical expert is shown the works of a recognized authority and states that he is familiar with them and considers them standard authorities, there is no good reason why he should not be asked if he concurs in the opinion of the author. It would create an anomalous situation to permit the witness by his own oath to qualify himself as an expert on the matter on which he testifies and then to refuse to allow opposing counsel to test his qualifications and truthfulness by the use of authorities that the witness himself says he is familiar with and are standard and so recognized by the members of his profession.—*Kern v. Pullen (Ore.), 6 P. (2d) 224.*

Society Proceedings

COMING MEETINGS

American Academy of Ophthalmology and Otolaryngology, Montreal, Sept. 19-23. Dr. William P. Wherry, 1500 Medical Arts Building, Omaha, Neb., Executive Secretary.

American Association of Obstetricians, Gynecologists and Abdominal Surgeons, French Lick, Indiana, Sept. 12-14. Dr. Magnus A. Tate, 19 West Seventh Street, Cincinnati, Secretary.

American College of Surgeons, St. Louis, October 17-21. Dr. Franklin H. Martin, 40 East Erie Street, Chicago, Director-General.

American Congress of Physical Therapy, New York, Sept. 6-10. Dr. F. B. Balmer, 185 North Wabash Avenue, Chicago, Secretary.

American Hospital Association, Detroit, Sept. 12-16. Dr. Bert W. Caldwell, 18 East Division Street, Chicago, Executive Secretary.

American Physical Therapy Association, Detroit, September 28-30. Dr. C. C. Vinton, 241-02 S. Conduit Blvd., Rosedale, N. Y., Secretary.

American Roentgen Ray Society, Detroit, September 27-30. Dr. Eugene P. Pendergrass, 3400 Spruce Street, Philadelphia, Secretary.

Associated Anesthetists of the United States and Canada, New York, October 17-21. Dr. F. H. McMechan, 318 Hotel Westlake, Rocky River, Ohio, Secretary.

Association of Military Surgeons of the United States, Hartford, Conn., October 20-22. Dr. J. R. Kean, Army Medical Museum, Washington, D. C., Secretary.

Central Association of Obstetricians and Gynecologists, Memphis, Tenn., September 15-17. Dr. E. D. Plass, University Hospital, Iowa City, Secretary.

Colorado State Medical Society, Estes Park, Sept. 8-10. Mr. Harvey T. Sethman, 227 16th Street, Denver, Executive Secretary.

Delaware, Medical Society of, Lewes, September 27-28. Dr. W. O. La Motte, 604 Medical Arts Building, Wilmington, Secretary.

Idaho State Medical Association, Pocatello, Sept. 16-17. Dr. Harold W. Stone, 105 North Eighth Street, Boise, Secretary.

Indiana State Medical Association, Michigan City, September 27-29. Mr. T. A. Hendricks, 23 East Ohio Street, Indianapolis, Executive Secretary.

Kentucky State Medical Association, Louisville, October 3-6. Dr. A. T. McCormack, 532 West Main Street, Louisville, Secretary.

Michigan State Medical Society, Kalamazoo, Sept. 13-15. Dr. F. C. Warnshuis, 148 Monroe Avenue, Grand Rapids, Secretary.

Nevada State Medical Association, Reno, Sept. 23-24. Dr. Horace J. Brown, 120 North Virginia Street, Reno, Secretary.

Oregon State Medical Society, Klamath Falls, Sept. 22-24. Dr. Albert W. Holman, 410 Taylor Street, Portland, Secretary.

Pennsylvania, Medical Society of the State of, Pittsburgh, October 3-6. Dr. Walter F. Donaldson, 500 Penn Avenue, Pittsburgh, Secretary.

Utah State Medical Association, Ogden, Sept. 15-17. Dr. Leland R. Cowan, 305 Medical Arts Building, Salt Lake City, Secretary.

Vermont State Medical Society, Burlington, October 6-7. Dr. William G. Ricker, 31 Main Street, St. Johnsbury, Secretary.

Washington State Medical Association, Tacoma, Sept. 12-14. Dr. Curtis H. Thomson, 1305 Fourth Avenue, Seattle, Secretary.

Wisconsin, State Medical Society of, Milwaukee, Sept. 14-16. Mr. J. G. Crownhart, 119 East Washington Avenue, Madison, Secretary.

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Current Medical Literature

AMERICAN

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Titles marked with an asterisk (*) are abstracted below.

American Journal of Physiology, Baltimore

101: 1-212 (June) 1932

Changes in Blood Associated with Fever Induced by Killed Bacillus Coli. M. G. Banus and E. Ginsburg, Boston.—p. 106.

Studies in Physiology of Vitamins: XVIII. Measurements of Vitamin B Requirement in Several Species of Animals. G. R. Cowgill, with Collaboration of H. J. Deuel, Jr., A. H. Smith, B. H. Klotz and H. H. Beard, New Haven, Conn.—p. 113.

Direct Intra-Arterial Blood Pressure Readings in Man. W. Dameshek and J. Loman, Boston.—p. 140.

Mode of Action of Adrenin and Quantitation of Adrenin by Biologic Methods. A. Rosenbluth, Boston.—p. 149.

Glucose Tolerance in Phlorhizinized Dog as Affected by Renal Vessel Ligation and Insulin. L. A. Goldstein, A. J. Tatelbaum, S. Ehre and J. R. Murlin, Rochester, N. Y.—p. 166.

Studies on Possibility of Gluconeogenesis from Fat: I. Response of Phloridzinized Dog to Insulin. Estelle E. Hawley, Rochester, N. Y.—p. 185.

Physiologic Effects of High Frequency Current: II. Further Studies on Respiratory Metabolism of Anesthetized Dogs. E. S. Nasset, Rochester, N. Y.—p. 194.

*Id.: III. Carbon Dioxide and Oxygen Content and Capacity and Concentration of Blood of Anesthetized Dogs. E. S. Nasset, Rochester, N. Y.—p. 203.

Physiologic Effects of High Frequency Current.—Nasset presents experimental data showing that, in hyperthermia produced by high frequency electric current, the blood was concentrated 40 per cent or more. Below a body temperature of 41 C. (105.8 F.) the hemoglobin saturation of the venous blood was increased; above this temperature it was diminished. The loss of water from the blood stream was accompanied, and probably partially compensated for, by a large storage of corpuscles in the spleen. The carbon dioxide content of venous blood was reduced as much as 30 per cent. The alkali reserve, as measured by carbon dioxide capacity, was decreased but to a lesser extent than the carbon dioxide content. It is suggested that this disturbance in the acid base relations of the blood is a consequence of three factors; namely, hyperthermia, hyperventilation and a greatly accelerated metabolic rate.

American Journal of Public Health, New York

22: 579-689 (June) 1932

Physical Impairment Among One Thousand Negro Workers. F. P. Allen, Cincinnati.—p. 579.

*Effect of Lead Arsenate Spray on Composition and Vitamin Content of Oranges. E. M. Nelson and H. H. Mottern, Washington, D. C.—p. 587.

*Public Health Aspects of Frozen Foods. C. R. Fellers, Amherst, Mass.—p. 601.

Statistical Study in Maternal Mortality. E. S. Macphail, Ottawa, Ont., Canada.—p. 612.

Montreal Water Supply. C. J. Desbaillets, Montreal, Canada.—p. 627.

*Diphtheria Toxoid Precipitated with Alum: Its Preparation and Advantages. D. M. Wells, A. H. Graham and L. C. Havens, Montgomery, Ala.—p. 648.

Effect of Lead Arsenate Spray on Oranges.—Nelson and Mottern present data to show that oranges produced by trees sprayed with lead arsenate differ in chemical composition from normal oranges. The most pronounced difference is a reduction in acidity of the juice; there is also a decrease in sucrose, with a corresponding increase in invert sugar. The arsenic content of the edible portion of the orange was not changed by spraying the tree with heavy doses of lead arsenate. The vitamin C content of oranges from trees sprayed with lead arsenate was found to be considerably lower than that of oranges from unsprayed trees of the same variety and the same degree of maturity. The processing of oranges as practiced by the Plant Quarantine and Control Administration to destroy larvae of the Mediterranean fruit fly did not change the character of the sugars, citric acid or vitamin C content of the fruit.

Public Health Aspects of Frozen Foods.—Fellers calls attention to the fact that fish, meats, poultry, eggs and oysters are especially well preserved by freezing because they retain more nearly their fresh appearance, flavor and character than fruits or vegetables. Most fruits when frozen with sugar retain their flavor well. Vegetables are the most recent addition to the list of frozen foods. Though some varieties freeze well, others do not. Spoilage occurs quickly in vegetables after defrosting. Little change occurs in the chemical, enzymic or nutritive properties as a result of freezing. The changes are largely physical. Freezing greatly reduces the number of micro-organisms present in foods and prevents their multiplication. Emphasis must be placed on the prompt utilization of frozen foods. Until more is known about the subject, frozen products should be consumed while still frozen or within a few hours after defrosting. The ready availability of a large variety of frozen foods at all seasons will serve to give variety and balance to the human diet and should aid in decreasing nutritional deficiency diseases.

Diphtheria Toxoid Precipitated with Alum.—Wells and his associates state that complete precipitation of toxoid with aluminum and potassium sulphate results in a purified product. More than 50 per cent of the original protein remains in the filtrate. A weak toxoid may by this procedure be concentrated to any desired degree. The alum precipitate has a high antigenic value. A single injection of 0.5 cc. in guinea-pigs protects against 50 to 100 minimum lethal doses of toxin injected four weeks later. A single injection of 1 cc. in ninety-eight Schick-positive children resulted in a negative test eight weeks later in ninety-two (94 per cent).

Archives of Neurology and Psychiatry, Chicago

27: 1273-1515 (June) 1932

Surgical Mortality Percentages Pertaining to Series of Two Thousand Verified Intracranial Tumors: Standards of Computation. H. Cushing, Boston.—p. 1273.

Histologic Classification of Tumors of Central Nervous System. G. Roussy and C. Oberling, Paris, France.—p. 1281.

*Histologic Diagnosis of Tumors of Brain. P. Bailey, Chicago.—p. 1290.

Tumors of Sheaths of Nervous System. W. Penfield, Montreal, Canada.—p. 1298.

*Ventriculography and Encephalography: Their Value in Localization and Treatment of Intracranial Lesions. F. C. Grant, Philadelphia.—p. 1310.

*Histologic Studies of Brain in Cases of Fatal Injury to Head: IV. Reaction of Classic Neuroglia. C. W. Rand and C. B. Courville, Los Angeles.—p. 1342.

*Small Foci of Demyelinization in Cortex and Spinal Cord in Diffuse Sclerosis: Their Similarity to Those of Disseminated Sclerosis and Dementia Paralytica. F. Wertham, New York.—p. 1380.

Congenital Hypoplasia of Olivopontocerebellar Tracts. H. M. Zimmerman and K. H. Finley, New Haven, Conn.—p. 1402.

Nerve Degeneration in Poliomyelitis: III. Rate of Depression and Disappearance of Components of Conducted Action Potential in Severed Nerves; Correlation with Histologic Degeneration in Groups of Fibers Responsible for Various Components. P. Heinbecker, G. H. Bishop and J. L. O'Leary, St. Louis.—p. 1421.

Sex Ratio in Migraine. W. Allan, Charlotte, N. C.—p. 1436.

Diagnosis and Treatment of Tumors of Brain: Review of Symposium at First International Neurological Congress. F. C. Grant, Philadelphia.—p. 1447.

Histologic Diagnosis of Brain Tumors.—Bailey states that the histologic nature of a brain tumor should be known before operation, because the operability of the tumor and the method of attack should depend to a certain extent on the histologic structure of the tumor. This is rarely possible to predict, up to the present time, in the case of tumors of the nerve tissue itself. When the surgeon discloses a tumor at operation, the author still believes that there are cases in which his attack should depend on the histologic nature of the lesion, and he is rarely sure enough of the nature of a glioma from the gross appearance to be willing to base his therapeusis thereon alone. There are two methods of determining during operation the nature of the tumor apart from the gross appearance. One is the method of supravital examination recently reported by Eisenhardt. The author has had several years' experience with this method and has not been able to become sufficiently expert to be willing to base his diagnosis on this method alone. It is possible in this way to distinguish between a meningeal tumor and a glioma, for example; but one encounters plenty of difficulty in distinguishing the different types of

gliomas from each other with all of the resources of microscopic technic. The other is the method of frozen sections, and this is still the most reliable, for the differentiation of the types of gliomas demands a knowledge of the architectural arrangement of the cells as well as of the structure of the individual cells. After the operation, either from operative specimens or from the necropsy, one obtains material that is useful for microscopic study. It has no longer much immediate practical value, except, perhaps, in the case of the operative specimen for making a prognosis. The author, for finer histologic study, employs three fixatives, either Zenker's or Bouin's fluid, a diluted formaldehyde solution ("solution of formaldehyde U. S. P." 1, water to make 10) and Cajal's formaldehyde-bromide solution. Others are rarely needed.

Ventriculography and Encephalography.—Grant is convinced that in patients with increased intracranial pressure, suspected of having a tumor of the brain, the air should be introduced by direct bilateral ventricular tap and not by lumbar puncture. Ventriculography gives more accurate information as to the position of a mass lesion with less distress and greater safety to the patient than does encephalography. But in patients without increased tension, for a differential diagnosis between atrophy, sclerosis and tumor, or between traumatic neurosis and true posttraumatic encephalopathy, for prognosis in epilepsy, birth trauma or degenerative disease, or for therapy in posttraumatic headache, an outline of the lateral ventricles and subarachnoid channels should always be obtained by encephalography.

Changes in Brain in Fatal Injury to Head.—Rand and Courville describe the changes in classic neuroglia as the result of injury to the human brain. In the first few days following trauma, the astrocytes in the immediately adjacent area undergo regressive change with the formation of ameboid glia. In the zone nearest the point of injury the cells undergo complete destruction. Beyond this zone of destruction, active proliferation takes place. Here, within a few hours after injury, double nucleated forms indicate active direct cell division. In a rather narrow intervening zone, apolar, bipolar and unipolar forms have been found, which, because of their ready impregnation with gold sublimate, are probably viable cells. This is furthermore suggested by the presence in these cells of double nuclei having normal morphologic characteristics. The authors have interpreted these elements as regressive forms capable of reversible reaction. Gliosis occurs only as a result of tissue destruction. The degenerating tissue probably serves as a chemical stimulant to the regional astrocytes. Extensively damaged brain tissue, which requires a rather prolonged activity on the part of the phagocytic mesoglia, delays for a considerable period the formation of the ultimate glial scar. The astrocytes taking part in this delayed reaction are themselves often victims of regressive change, particularly of a hyaline nature. Judging from studies in comparatively recent cases, it seems likely that the neuroglial reaction is a purely local affair and consequently that generalized gliosis following head injury does not occur. The remote clinical sequelae of such injuries are largely to be interpreted on the basis of focal and distant cortical injuries. In addition, there are numerous interruptions in the connecting pathways incident to focal and subcortical injury, together with the changes following widespread petechial hemorrhages.

Foci of Demyelinization in Diffuse Sclerosis.—Wertham calls attention to the fact that small foci of demyelinization may occur in the spinal cord in diffuse sclerosis far from the large lesion in the cerebrum. These foci are primary and not due to secondary degeneration. In one case reported by the author they were similar to the plaques of multiple sclerosis, and in another case they resembled the lesions in subacute combined degeneration. Small areas of demyelinization in the cortex also, not previously described in this condition, were demonstrated in diffuse sclerosis. These small foci of demyelinization in the spinal cord and in the cortex are of the same type as those found in multiple sclerosis and dementia paralytica. The demonstration of these small lesions in the cortex and the spinal cord in diffuse sclerosis shows that there are forms of diffuse sclerosis that resemble multiple sclerosis so closely that in the absence of etiologic knowledge they cannot be distinguished from it.

California and Western Medicine, San Francisco

36: 377-480 (June) 1932

What Medical Profession Can Do to Diminish Mortality from Cancer. R. B. Greenough, Boston.—p. 377.

*Resection of Pylorus: Its Effect on Secretory and Motor Functions of Stomach: Research Prize Paper of Sixty-First Annual Session of the California Medical Association. H. L. Thompson, Los Angeles.—p. 383.

Psychopathic Wards in General Hospital. H. G. Mehrtens, San Francisco.—p. 388.

Regional Anesthesia: Its Modern Technic and Therapeutic Application. M. B. Greene, Brooklyn.—p. 389.

Fractures of Pelvis as Met with in Motor Vehicle Accidents: Report of Cases. Q. B. Coray, Salt Lake City.—p. 392.

Lure of Medical History: Rise of Experimental Embryology. A. W. Meyer, San Francisco.—p. 394.

Resection of Pylorus.—Thompson reports a comprehensive study of the effects of resection of the pylorus on the secretory and motor functions of the stomach. The manner of approach is different from that of any clinical or experimental investigation reported previously. The method is based on the application of certain standard and specially devised surgical operations to the normal stomachs of dogs. The physiologic effects of the operations are observed by gastric analysis and by roentgenologic examination. Contrary to prevailing opinion, and despite the fact that the pyloric sphincter regulates the emptying of the stomach and the admission of duodenal juices into it, resection of the sphincter, combined with Polya gastrojejunostomy, does not lower the acidity of the gastric contents nor hasten emptying of the stomach. Graduated multiple resections of the pylorus confirmed the prevailing belief that the pylorus is essential to physiologically normal gastric secretory function. A roughly quantitative relation between the amount of pylorus present and the efficiency of secretion is suggested. The fact that widening of the outlet of the stomach does not shorten its emptying time also is contrary to the general conception. The most important contribution resulting from this study refers to the apparent and real secretory functions of the pylorectomized stomach. The use of histamine and the Pavlov pouch disclose that the fundus, after removal of the pylorus, continues to secrete gastric juice having normal acid values. The most important factor in the secretion of gastric juice by the pylorectomized stomach is the cephalic phase of secretion as revealed by the performance of vagotomy. Achlorhydria occurring after pylorectomy is only apparent and is the result of neutralization by the duodenal juices and the food. In the past the importance of the duodenal juices in this respect has been overemphasized, whereas the neutralizing capacity of the food has not been stressed sufficiently.

Colorado Medicine, Denver

29: 233-268 (June) 1932

Chronic Nephritis. R. H. Major, Kansas City, Kan.—p. 236.

The Outlook for Medicine. J. W. Amesse, Denver.—p. 242.

Rheumatic Fever. L. W. Frank, Denver.—p. 245.

Rheumatic Heart Disease. C. T. Burnett, Denver.—p. 248.

Surgical Forms of Nontuberculous Joint Diseases. C. E. Sevier, Denver, —p. 251.

Arthritis Deformans. C. N. Meader, Denver.—p. 253.

Illinois Medical Journal, Chicago

61: 453-540 (June) 1932

Medicine and Big Business. R. R. Ferguson, Chicago.—p. 491.

Parenteral Administration of Liver Extract in Postoperative Treatment. J. K. Narat, Chicago.—p. 498.

The State of Illinois and Its Problem of Mental Disease and Defectiveness. C. F. Read, Elgin.—p. 502.

Early Diagnosis of Acute Intestinal Obstruction. E. I. Greene and J. M. Greene, Chicago.—p. 506.

Sterility in the Male. V. D. Lespinasse, Chicago.—p. 509.

Treatment of Intestinal Obstruction: Based on Newer Conception of Rôle that Chemical Disturbances, Shock Syndrome and Transperitoneal Absorption of Toxins Play in Production of Symptoms. E. H. Mensing, Milwaukee.—p. 511.

Appendicitis and Poliomyelitis. M. H. Hobart, Chicago.—p. 518.

Agranulocytic Angina: Case Report of Recovery Following Treatment by Intravenous Injection of Liver Extract. F. L. Foran, Chicago. —p. 521.

Clinical Significance of Anomalies of Upper Urinary Tract. V. J. O'Conor, Chicago.—p. 523.

Surgical Anatomy of Thyroid Gland. R. F. Weisbrenner, Chicago.—p. 528.

Organic Sulphur in Treatment of Secondary Anemia. W. L. Benisheh and E. T. Hessle, Joliet.—p. 531.

Use of Glucose in Surgical Therapeutics. R. W. McNealy and J. D. Willems, Chicago.—p. 535.

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Iowa State Medical Society Journal, Des Moines

22: 243-294 (June) 1932

The President's Address. C. G. Smith, Granger.—p. 243.
President Elect's Address. B. L. Eiker, Leon.—p. 244.
Radiotherapy and Its Use in General Surgery. E. L. Rypins, Iowa City. —p. 248.
*Duodenal Diverticulum: Review of Literature and Report of Three Cases. A. T. Harris, Sheldon.—p. 252.
Poliomyelitis. R. Stahr, Fort Dodge.—p. 259.
Noise and Some of Its Ill Effects. R. R. Snyder, Des Moines.—p. 263.
Results of Monocular Occlusion of Each Eye in Testing for Hyperphoria. L. A. Taylor, Ottumwa.—p. 267.

Duodenal Diverticulum.—According to Harris, duodenal diverticulum is relatively common, being present in approximately 1 per cent of all gastro-intestinal roentgen examinations. Three cases are reported in a series of 400 such examinations over a period of three years. Polgar's classification into genuine and pseudo diverticula is advanced as the most logical for the clinician, the roentgenologist and the surgeon, leaving histologically correct classifications to the pathologist. The genuine diverticulum is, etiologically, due to a congenital defect or weakness with superimposed pathologic changes causing increased intra-intestinal pressure. The pseudodiverticulum is primarily due to a preexisting pathologic condition that weakens or breaks through that immediate portion of intestine. Practically all diverticula occur in patients past middle age. Diverticula vary considerably in size and number. Constant symptoms are (1) the periodicity of the attacks, (2) the feeling of well being in the morning, with pain and vomiting coming on toward evening, and (3) the relief from symptoms on lying down. It is emphasized that these and other probable symptoms are due to the superimposed diverticulitis. The complications and not the anatomic disturbance cause all symptoms, the diverticulum, alone, being innocent. The roentgen signs alone are diagnostic of diverticulum and also establish the diagnosis of diverticulitis. Other things being equal, any slowly emptying diverticulum which is probably complicated by diverticulitis is best treated surgically.

Journal of Biological Chemistry, Baltimore

98: 573-805 (June) 1932. Partial Index

Effect of an Acid Extract of Anterior Pituitary on Iodine Concentration of Blood and Thyroid Gland. K. Closs, L. Loeb and E. M. MacKay, La Jolla, Calif.—p. 585.
*Factors in Food Influencing Hemoglobin Regeneration: I. Whole Wheat Flour, White Flour, Prepared Bran and Oatmeal. Mary Swartz Rose and Ella McCollum Vahlteich, New York.—p. 593.
*Studies in Physiology of Vitamins: XIX. Acid-Base Balance of Blood During Lack of Undifferentiated Vitamin B. Ethel Burack and G. R. Cowgill, New Haven, Conn.—p. 673.
Id.: XX. Glucose Tolerance During Lack of Undifferentiated Vitamin B. Ethel Burack and G. R. Cowgill, New Haven, Conn.—p. 685.
Metabolism of Tryptophane: III. Availability of Kynurenine in Supplementing a Diet Deficient in Tryptophane. R. W. Jackson and W. T. Jackson, New Haven, Conn.—p. 697.
*Galactose Tolerance of Normal and Diabetic Subjects, and Effect of Insulin on Galactose Metabolism. J. H. Roe and A. S. Schwartzman, Washington, D. C.—p. 717.
Fat Transport Through Lymph System in Fasting and Phlorhizin Poisoning. H. R. Rony, B. Mortimer and A. C. Ivy, Chicago.—p. 737.
Studies on Rennin: I. Purification of Rennin and Its Separation from Pepsin. H. Tauber and I. S. Kleiner, New York.—p. 745.
Id.: II. Isolation of Prorennin. I. S. Kleiner and H. Tauber, New York.—p. 755.
Lipid Excretion: VIII. Lipid Content of Intestinal Mucosa. W. M. Sperry, New York.—p. 759.
Id.: IX. Secretion of Lipids into Intestine. W. M. Sperry and R. W. Angevine, New York.—p. 769.

Food Factors Influencing Hemoglobin Regeneration.—According to Rose and Vahlteich, the cure of nutritional anemia induced in rats by milk feeding may be accomplished in six weeks by supplementing milk with whole wheat, prepared bran, or oatmeal in quantities to furnish as much as 0.2 mg. of iron daily. Copper as well as iron plays a part. A hydrochloric acid solution of whole wheat or of bran ash does not give quite as good regeneration as the original food material. The average hemoglobin increase with the ash of 6 Gm. of whole wheat was 7.8 Gm. per hundred cubic centimeters of blood, about the same as with iron and copper supplements to white flour, while that of the original wheat was about 30 per cent higher. The difference between the hemoglobin regeneration induced by the ash of 1.8 Gm. of prepared bran and the corresponding quantity of the bran itself was less striking but in the same direction.

Studies in Physiology of Vitamins.—Burack and Cowgill made a study of the dextrose tolerance of dogs subsisting on a diet lacking undifferentiated vitamin B. The effects of the concomitant fasting were adequately controlled. A definite decrease in dextrose tolerance was exhibited by both the vitamin B-deficient animals and the controls. The degree of the disturbance was directly proportional to the severity of the fasting. In five polyneuritic animals the vitamin was administered in the form of a preparation containing a considerable amount of carbohydrate, so that it was not possible to conclude whether the observed improvement in dextrose tolerance was due specifically to the vitamin. In two experiments a concentrate of the antineuritic factor practically devoid of carbohydrate and suitable for parenteral administration was available. Intravenous injection of this product was made into the dogs exhibiting the characteristic nervous manifestations of vitamin B deficiency. Despite the removal of the symptoms by this concentrate there was no significant effect on the carbohydrate tolerance. Ingestion of food, however, was promptly followed by a return of the dextrose tolerance to normal. On the basis of their study the authors conclude that the decrease in carbohydrate tolerance shown by animals deprived of vitamin B is the result of the accompanying inanition. The view that vitamin B plays a specific rôle in the metabolism of carbohydrate is not supported by their investigation.

Galactose Tolerance of Normal and Diabetic Persons.—Roe and Schwartzman present experimental data which show that galactose is well tolerated by diabetic persons when given in large doses. The administration of galactose in smaller amounts along with other foods should result in even better tolerance and less urinary excretion. It therefore seems probable that galactose might be made a valuable adjunct to the diet in the clinical management of diabetes mellitus. The use of a sugar that has nutritive value and a satisfying sweetness, and whose administration by mouth produces practically no greater saccharemia in diabetic persons than in normal subjects, should mark considerable advance in the control of diabetes mellitus and its undesirable consequences, such as diabetic retinitis and endarteritis, conditions which are presumably etiologically related to hyperglycemia. The authors' work demonstrates that galactose ingestion by the diabetic person does not produce the hypersaccharemia characteristic of dextrose ingestion, and that this is apparently because insulin is not necessary for the anabolism of galactose.

Philippine Islands M. Assn. Journal, Manila

12: 147-196 (April) 1932

Lymphatic Absorption of Oily Antileprotic Drugs, Given Intradermally and Subcutaneously: A Demonstration. J. O. Nolasco, Culion.—p. 147.
Cataract Among Filipinos. A. R. Ubaldo and C. D. Ayuyao, Manila.—p. 160.
Normal Pelidisi Index of Filipinos. M. Ocampo and I. Concepcion, Manila.—p. 164.
Vulvectomy and Perineorrhaphy in Epithelioma of Vulva and Rectum. C. D. Franco, Manila.—p. 171.
Relationship of Nutrition of Mother and That of Fetus. H. Acosta-Sison, Manila.—p. 173.

Rhode Island Medical Journal, Providence

15: 77-96 (May) 1932

Pathologic Gallbladder: Roentgen Aspect. P. Batchelder, Providence. —p. 77.
Electrocardiograph as Diagnostic Aid. C. C. Dustin, Providence.—p. 78.

15: 97-114 (June) 1932

Gallbladder Disease. H. E. Wellman, Providence.—p. 97.
Treatment of Acute Poliomyelitis with Convalescent Serum. D. L. Richardson and E. J. West, Providence.—p. 100.

West Virginia Medical Journal, Charleston

28: 241-288 (June) 1932

Clinical Value of Electrocardiograph. G. H. Barksdale, Charleston.—p. 241.
Clinical Experience with "Avertin" Anesthesia. C. C. Greer, Clarksburg.—p. 247.
"Avertin" Anesthesia. J. A. Duff, Martinsburg.—p. 250.
Intravenous Urography with Uroselectan: Report of Case. L. E. Shrewsbury, Beckley.—p. 255.
Focal Infection from Dental Standpoint. C. R. Adams, Charleston. —p. 259.
The County Secretary. G. R. Maxwell, Morgantown.—p. 260.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

1: 923-968 (May 21) 1932

*Menopausal Insanity and Bacterial Toxemia. T. G. Moorhead.—p. 923.
*Menopause and Its Complications. G. FitzGibbon.—p. 924.
*Phototherapy in Erysipelas. J. M. Davidson.—p. 929.
Carbon Dioxide Absorption Methods in Anesthesia. F. T. Evans.—p. 931.
Use of Takayama's Solution in the Identification of Blood Stains. A. V. Greaves.—p. 932.
Sarcoma Associated with Known Trauma: Two Cases. D. H. Haler.—p. 933.
Ambulatory Treatment of Varicose Veins by Combination of Ligation and Injection. A. D. Wright.—p. 934.

Menopausal Insanity and Bacterial Toxemia.—Moorhead considers it of importance to examine every case of insanity occurring at the climacteric for possible septic infection. He reports a case of menopausal insanity that was apparently due to focal sepsis. For most of the time the patient was unable to speak, to stand or to walk. All her muscles were excessively flabby; she apparently did not recognize people. There was dribbling of saliva all the time, constant incontinence of urine and feces, and her expression was quite devoid of any intelligence. There was sobbing and crying sometimes nearly all day. She seemed quite hopeless. During ten months, with the exception of a short period of distinct mental improvement, she became from the psychologic point of view progressively worse. There was extreme depression, frequent fits of weeping, sometimes extreme restlessness with shouting. The idea was suggested that a hysterectomy might possibly relieve the symptoms. A complete hysterectomy was performed, both ovaries being removed at the same time. The excised uterus was found to be in a much more septic condition than had been imagined. From the physical point of view the patient stood the operation well, and, apart from a mild heart attack three weeks later, probably caused by small emboli reaching the lungs, she made an uninterrupted recovery. The most striking result of the operation, however, is the fact that almost immediately after the operation her mental condition showed a most remarkable improvement. A week before the operation, an experienced alienist regarded her condition as one of hopeless presenile dementia. Three weeks after the operation, she was able to reply sensibly to simple questions. After a week she began to notice her surroundings and to recognize her friends and relatives. In a fortnight there was evidence of returning memory. From that day there has been progressive improvement physically and mentally. Five months after the operation, the patient was able to go out for daily walks and drives; she eats well, sleeps well, and enjoys the visits and conversation of her friends. She writes short letters, can read the newspaper for a short period, and her face has recovered its old expression of intelligence.

Menopause and Its Complications.—FitzGibbon enumerates the causes of pathologic states of the uterus at the time of the menopause as follows: (1) ascending infection promoted by stagnation of menstrual or other discharges from the uterus and cervix; (2) laceration and damage during childbirth of the cervix and parametric tissues, exposing those tissues to chronic infection; (3) septic infection following childbirth; (4) gonococcal infection on which secondary infection has supervened—far less common than the preceding, and (5) growth and influence of neoplasms, chiefly uterine fibroids. The pathologic lesions that are produced and influence the course of the menopause are: (1) chronic hyperplasia of the body of the uterus; (2) chronic metritis with chronic cervicitis, and (3) chronic cervicitis, with or without parametric induration. Associated with these conditions there is an increased vascularity; the smaller arteries are hypertrophied, and there is venous congestion. During the active child bearing period of life these lesions produce varying degrees of leukorrhea calling for palliative treatment, such as routine douching, applications of caustics, and curettages. These treatments have no more curative effect on the chronic infection than gargles in chronic tonsillitis. Amputations of the cervix effect cures when the portio vaginalis is the part involved, but they frequently stop far short of removing the main center of infection, which is the supravaginal portion. When the period of the menopause is reached, and atrophy of tissue has proceeded, the vitality of the tissues is reduced, and the production of toxins from the chronic infection is increased. The local condition, leukorrhea, has been accepted as inevitable, while increased menstrual loss reduces the woman's resistance but is considered a necessary part of the menopause. The author in no sense advocates hysterectomy as a universal treatment for ill health at the time of the menopause. The differential diagnosis of the lesions described is a difficult and minute matter. It is seldom possible to make an early decision. In the majority of instances a decision will be reached only after a period of observation, but the lesions which exist at the onset of the menopause can be observed and should be sufficient to indicate treatment by hysterectomy if the ill health increases. Serious and permanent damage may thus be prevented. When hysterectomy is resorted to, it must be of the total type. The failure to observe the benefits of hysterectomy in these cases has in the past resulted from the common practice of performing the high partial operation: this relieved the menstrual symptoms but did not remove the toxic element.

Phototherapy in Erysipelas.—Davidson presents a report on fifty-one cases of erysipelas treated by exposure to an artificial source of ultraviolet radiation, the exposure being from one and a half times to twice that required to produce a definite erythema on normal skin. The treatment of erysipelas, particularly the early case, by ultraviolet radiation appeared to give better results than other methods in use. The method is easily applied, usually available, devoid of danger, clean and inexpensive. The technic is simple and can be carried out with any ultraviolet lamp of known efficiency. Before treatment is begun, any soothing preparation previously applied to the part, especially if greasy, is carefully removed from the affected area and surrounding skin. All patients, except infants, are exposed for five minutes with the arc at a fixed distance of 12 inches (30 cm.). In the case of infants a slightly shorter exposure is employed, when the actual individual erythema dose is not estimated. In all cases part or all of the inflamed area, according to its extent, is included in the exposure, with a margin of about 1½ inches (3.8 cm.) of healthy skin when this is possible, the rest being protected by some light covering. In facial and head cases generally, the eyeballs are protected by small pads of absorbent cotton fixed by a narrow strip of adhesive plaster, but the eyebrows are left uncovered, and each part of the spreading edge is systematically exposed to rays falling, as far as possible, perpendicularly. When the entire involved area is easily covered by one exposure this completes the treatment, but occasionally part of the lesion, which at the time of admission is assumed to have subsided, is neglected and has to be treated later. In the few cases in which definite extension occurs through the erythematous area, the treatment is repeated one or two days later if a margin of healthy skin can still be included. Following the irradiation, the affected part is left uncovered, or at least without dressings, except when pain is a prominent feature, and in these lint wrung out in cold water and frequently renewed is sufficient. All other treatment is symptomatic.

Lancet, London

1: 1131-1184 (May 28) 1932

*Bright's Disease: Unity and Relationships of Toxic Nephritis. H. Gainsborough.—p. 1131.
*Spontaneous Subarachnoid Hemorrhage. A. J. Hall.—p. 1135.
*Cardiac Irregularities During Chloroform Anesthesia. I. G. W. Hill.—p. 1139.
Additional Factors in Treatment of Late Rickets and Osteomalacia. D. C. Wilson.—p. 1142.

Bright's Disease.—According to Gainsborough, toxic nephritis is a disease in which progressive changes in the kidneys, of the most variable severity, are associated with a clinical picture which presents a unity, despite the differences which are due mainly to the length of duration of the process. From the most acute forms to the mildest forms, every degree of severity can be found, and it is impossible to find natural subdivisions. "Nephrosis" comprises a clinical and metabolic syndrome which is superimposed on all cases of toxic nephritis to a degree depending mainly on the mildness of the nephritis and consequently on the length of time available for this

syndrome to develop. The most nephrotic cases are those in which the nephritis presents the mildest histologic changes and the slowest rate of progression. All cases of toxic nephritis present a progressive loss of renal function and tend to terminate in uremia. In the most nephrotic cases this change is so slow that in such cases the patients die usually from intercurrent infection or recover before loss of renal function, as usually measured, is recognizable. The nature of this progressive loss of renal function is identical in all cases of toxic nephritis, whatever the cause and whatever the severity.

Spontaneous Subarachnoid Hemorrhage.—Hall believes that in any individual case of spontaneous subarachnoid hemorrhage the question of death or recovery depends largely on whether the bleeding point is capable of firm closure or not, and this in turn depends on its size and surroundings. These cannot be known during life. Provided the patient is kept at rest, and lumbar puncture is done at the onset for diagnostic purposes, and incidentally to a sufficient extent to relieve any increased pressure at the time, it is unnecessary to expose the patient to the discomfort of repeated punctures, unless the pressure symptoms persist or get markedly worse. Slight exacerbations may occur from time to time but are probably not due to further bleeding, and they disappear when left alone.

Cardiac Irregularities During Chloroform Anesthesia.—Hill states that disturbances of cardiac action which generally elude clinical observation can be detected electrocardiographically during chloroform anesthesia. They occur in about 50 per cent of cases and are of the nature of multiple ventricular extrasystoles. These on occasion may be very numerous, and the condition then resembles the "multiple ventricular tachycardia" so characteristically found in the cat, and well known as a precursor of fatal ventricular fibrillation. The author believes that the danger of chloroform for induction probably lies in its tendency to produce these disturbances.

Presse Médicale, Paris

40: 981-996 (June 22) 1932

Insufflation of Stomach in Clinical Roentgenography. P. Duval and H. Béclère.—p. 981.
*Rapid Cholecystography. C. Antonucci.—p. 983.
Nontraumatic Fractures and Fragmentations of Patella. J. Didiée.—p. 987.
Path of Evacuation of Gallbladder. Nemours-Auguste.—p. 988.
Rapid Roentgenographic Exploration of Appendix. S. Kadrnka and R. Sarasin.—p. 990.

Rapid Cholecystography.—By giving an injection of dextrose before the injection of tetiothalein sodium, Antonucci obtains cholecystograms in a shorter time than is possible by the method now in use. The essential part of his method consists in an intravenous injection of 125 cc. of a 40 per cent solution of dextrose followed after a ten minute interval by an intravenous injection of from 2 to 3 Gm. of tetiothalein sodium in the usual solution. When possible, it is well to prepare the patient by placing him on a low carbohydrate diet for three or four days previous to the test to aid in the complete absorption of the sugar mixture by the liver, but this is not necessary. When the patient is prepared only by fasting during the night and morning hours prior to the test, the intravenous injection of the sugar and tetiothalein sodium may be followed by 25 units of insulin given subcutaneously, but this is also not necessary. By this method visualization in normal individuals begins from one-half to one hour after the injection and reaches a maximum two hours after injection. The author thinks that the explanation for the rapidity of visualization by this method lies in the fact that dextrose is necessary for the absorption of tetiothalein sodium by the liver. This explanation was supported by a study of the sugar curves following injection of tetiothalein sodium alone and also by the results of injection of this substance alone into diabetic persons. It was demonstrated experimentally that the author's method produces an afflux of bile after half an hour, two or three times that produced in Graham's method; this rapid and abundant afflux of bile charged with iodine helps to account for the rapid visualization. Strawberry gallbladders were filled not at all or slowly. Whatever the explanation, failure of the gallbladder to become filled by this method is, in the absence of other abdominal disturbances which might account for it, a certain sign that the organ is diseased.

Deutsche medizinische Wochenschrift, Berlin

58: 919-958 (June 10) 1932. Partial Index

*Auxoneurotropic Action of Epinephrine and of Solution of Pituitary. U. Friedemann and A. Elkeles.—p. 923.
Diagnosis of Beginning Circulatory Insufficiency. H. Strauss.—p. 926.
Concurrence of Diabetes Mellitus and Catarrhal Icterus. H. Dibold.—p. 928.
*Use of Canned Vegetables and Fruits in Feeding of Nurslings and Children. A. Reiche.—p. 929.
Action of Quinine on Avian Malaria and on Pneumococcic Infection of White Mice. P. Kuhn and K. H. Dombrowsky.—p. 930.
Means to Facilitate Suturing of Operative Wounds. H. Oppenheimer.—p. 932.
Automatic Registration of Erythrocyte Sedimentation Speed. E. Sachs.—p. 932.
Recognition and Treatment of Sepsis. A. Buzello.—p. 933.
Cinematographic Demonstration of Emigration of Leukocytes in Warm-Blooded Animals. J. Tannenberg.—p. 936.
Cinematographic Technic in Psychiatry and Neurology. A. Strauss.—p. 937.

Auxoneurotropic Action of Epinephrine and of Solution of Pituitary.—In animal experiments for production of anesthesia by artificial perfusion of the brain, Friedemann and Elkeles found that intravenous injection of epinephrine and of solution of pituitary reduced the threshold value of anesthetics such as ethyl urethane, paraldehyde and alcohol to about one fifth; that is, one fifth of the usual anesthetic dose was sufficient to produce anesthesia. Other hormones, such as insulin and thyroxine, did not have this effect. It was also noted that the toxic action of strychnine and of cobra toxin was increased fivefold by epinephrine and solution of pituitary. By special methods of staining it could be demonstrated that the auxoneurotropic action of epinephrine and solution of pituitary can be traced to an increased invasion of neurotropic substances into the brain. Substances that are not neurotropic, such as arsphenamine, antitoxin and trypan blue, do not enter the brain even under the influence of epinephrine or solution of pituitary. The authors discuss the significance of these observations for pharmacologic, chemotherapeutic, serotherapeutic and pathogenic problems.

Canned Vegetables and Fruits in Feeding of Children.—In order to determine whether canned fruits and vegetables are suitable for feeding nurslings and children, Reiche made observation on 613 inmates of a children's home, who for shorter or longer periods were fed with canned vegetables. The children were subjected to regular examinations, the urine was tested, the first signs of rickets were watched for, and occasionally roentgen tests were made. These observations revealed that factory canned fruits and vegetables can be used for long periods in the diets of nurslings and children without causing disorders that are produced by vitamin deficiency.

Zentralblatt für Chirurgie, Leipzig

59: 1457-1504 (June 11) 1932

Technic of Suprapubic Prostatectomy. D. Kulenkampff.—p. 1458.
*Operation of Double Harelip. A. Hagentorn.—p. 1460.
Extended Sacral Operation for Cancer of Rectum. F. Makai.—p. 1464.
*Operative Results of Herniotomy in Femoral Hernia. E. Husted.—p. 1465.
Acute Appendicitis with Adhesions of Femoral Nerve. F. Schewket.—p. 1471.
Protection of Abdominal Walls During Laparotomies by Means of Rubber Flanges. E. Fuchsig.—p. 1472.
Tilted Kidney Caused by Kyphoscoliosis. O. Orth.—p. 1474.
Simple and Successful Treatment of Ganglions. H. Günther.—p. 1476.

Operation of Double Harelip.—Hagentorn declares the following rules as essential for a successful operation of harelip: (1) complete preservation of all the tissues, because the misformed lip has no excess of tissues; (2) utilization of each special tissue for the purpose for which it was intended by nature. He considers operations that do not follow these rules no longer justified. For the double harelip he recommends two operations. He describes his operative technic. The first intervention has the purpose to repair the cleft, preserve the philtrum and form the red portion of the lip. The second operation can be performed from three to four weeks after the first one, or later. It is done to raise and narrow the broad, flat nose, to improve the septum and philtrum, and to bring the lip downward and forward. If it is considered how much the correction of the malformation means to the patient, and that the second intervention can be made at any time later

(because the first operation overcomes the main deformity), the greater complexity of the two-stage procedure cannot be considered as a contraindication, for the better results justify it.

Results of Herniotomy in Femoral Hernia.—The review of a large material convinced Husted that operations for femoral hernia have a larger percentage of relapses than is usually admitted, but it also showed that a special type of operations, namely, the so-called inguinal methods, give better results than any others. In these interventions the inguinal canal is opened and the hernial sac extirpated high. Then the femoral and inguinal canals are closed by suturing the musculature and Poupart's ligament to the pelvic rim (pecten ossis pubis).

Zentralblatt für Gynäkologie, Leipzig

56: 1505-1568 (June 18) 1932

Plastic Surgery of Mamma. L. Fraenkel.—p. 1506.
*Time of Conception. M. Bolaffio.—p. 1510.
Therapy of Myoma. W. Benthin.—p. 1520.
Decidua Menstrualis. L. Ballin.—p. 1525.
Pharmacologic Behavior of Uterus of Guinea-Pigs During Various Phases of Cycle and of Gravidity. H. Hartmann and F. Schäfer. —p. 1526.
Biologic Behavior of Uterine Muscle of White Mice. F. Kammerhuber. —p. 1531.
Anencephalus in Twin Pregnancy. S. Simon.—p. 1536.

Time of Conception.—Bolaffio disagrees with Knaus and Ogino (abstr. THE JOURNAL, Oct. 12, 1929, p. 1183, and June 18, 1932, p. 2257), who assume that there is a period of physiologic sterility during the menstrual cycle. He believes that there is no period of absolute sterility but that there are considerable fluctuations in the degree of conception capacity. Conception is most likely during the first twelve days of the menstrual period, the seventh and eighth days being the most fertile. During menstruation the first two days are less fertile than the following. The conception capacity decreases from the ninth day on. Least fertile is the period between the seventeenth and the twenty-eighth day, but to consider conception an impossibility during this period is not warranted. If the menstrual period is longer than twenty-eight days, the time immediately preceding menstruation has a considerable degree of fertility. The author also expresses the opinion that the conception of boys is most frequent during the period of greatest fertility, and he thinks it probable that the degree of maturity of the ovum is responsible for this. He also discusses causes and time of the rupture of the follicle.

Terapevtichesky Arkhiv, Leningrad

9: 281-350, 1931

Clinical and Experimental Study of Gallop Rhythm. L. I. Fogelson. —p. 283.
*Determination of Venous Pressure, Changes in Phlebogram by Plesch's Method and Early Diagnosis of Decompensation. A. L. Vilkoviskiy and S. I. Umanskiy.—p. 294.
Roentgenokymography in Analysis of Cardiac Contraction. G. E. Sorokin.—p. 305.
Experimental Study of So-Called Heart Hormone and Its Value in Cardiotherapy. D. M. Abdulaev.—p. 313.
*Practical and Theoretical Study of Diets in Treatment of Ulcer of Stomach: Butter and Egg-White Diet. B. P. Kushelevskiy.—p. 323.
Hyperglycemic Curve in Various Hepatic Disturbances (Effect of Overloading with Sugar). D. I. Malskiy.—p. 335.
Disturbances of Sympathetic Nervous System: Organoneurosis, Organopathy and Cerebropathy. E. M. Kastanayan.—p. 342.

Venous Pressure.—Vilkoviskiy and Umanskiy used Valdman's apparatus in the determination of venous pressure. Sodium citrate, instead of water, in the manometer minimized the possibility of blood clots. It has been suggested that decompensation is related to stagnation in the greater circulation and consequently to venous pressure. Plesch's method, which the authors used for determination of the venous pressure, is based on the fact that pressure in the region of the liver during decompensation causes a stagnation in the right ventricle and the central veins and then a dilatation in the jugular veins. The phlebogram registered such changes. The authors examined thirty-nine patients with compensated and forty-four patients with decompensated cardiac conditions and conclude that absolute figures of venous pressure are not of clinical interest. In normal and compensated cardiac conditions Plesch's test registers an increase of venous pressure of from 2 to 10 mm. of water, whereas in patients with decompensation the venous pressure is always increased in excess of 10 mm. of water. Plesch's test may be used in the early diagnosis of decompensation as well as for a control method in treatment.

Diets in Treatment of Ulcer of Stomach.—Kushelevskiy states that during the last eight years he has observed 300 patients with gastric and duodenal ulcers and has treated 155 of those with the more severe and complicated ulcers with a modification of Yarotskiy's diet. The entire treatment was divided into three parts: The first part, which lasted from eight to ten days, consisted of a strict butter and egg-white diet, not exclusive of liquids; the diet during the second and transition period (from four to six days after disappearance of pains) included thick porridge, no salt, and with 100 Gm. of butter for luncheon and dinner and two soft boiled eggs for breakfast, and in case of continued pains, a glass of egg-white for an interval of from three to five days; at the beginning or end of the third week, the third part of the diet included besides the thick gruel also tea with milk, fried eggs, white biscuits, milk soups, purée, compotes, and small quantities of milk (preferably citrated). To combat hypersecretion the author administered extract of belladonna (from 0.015 to 0.02 Gm. three times a day) as well as alkalis and magnesium carbonate. The first period relieved the pain and gave the stomach more modulated motor function, the second served as a test for treatment and the third period brought the patient back to a normal diet and built up his strength again. The results were favorable in 95 per cent of the patients treated. The author believes that Yarotskiy's diet did not decrease gastric secretion—whenever that occurred, it was probably due to psychic inhibition. In 50 per cent of the patients the gastric secretion was increased, in 23 per cent it was decreased, and in 27 per cent it was unchanged. Roentgenograms before and after the diet did not demonstrate a parallelism between motor and secretory function. The alleviating action of the diet is not due to a lowered acidity but to elemination of the pyloric spasm and irregularities in motor function. The strict albumin-fat diet with sparing of carbohydrates during the first period results in acidosis, ketosis and acetonuria, which disappear when the diet is expanded; while the large quantities of butter may have a therapeutic effect through the resultant cholesteremia.

Hospitalstidende, Copenhagen

75: 677-704 (May 12) 1932

*Clinical Significance of Diastasuria: II. Postoperative Diastasuria. J. Foged.—p. 677.
Experiences with Metal Salt Treatment According to Walbum in Diseases of Nervous System. Sarah Kielberg and C. J. Munch-Petersen. —p. 699.

Postoperative Diastasuria.—Foged made about 3,000 determinations of the postoperative diastase content of the urine in 728 patients. In 101 a pathologically increased postoperative diastasuria was noted. As causes he discusses anesthesia, traumatic irritation of the pancreas, decreased diuresis, wound infection and infectious toxic pancreatitis.

Hygiea, Stockholm

94: 417-448 (June 15) 1932

Case of Poisoning with Etheroleum Sabinae with Unusual Picture. E. Wessén.—p. 417.
*Histamine in Diagnosis of Latent Jaundice. H. af Ekenstam.—p. 426.
*Sedimentation Reaction in Fractures. T. Olovson.—p. 433.

Histamine in Diagnosis of Latent Jaundice.—Af Ekenstam concludes that the histamine test cannot replace the usual methods for determination of the bilirubin content of the blood serum, but because of its simplicity it can be a useful guide to the practitioner.

Sedimentation Reaction in Fractures.—Olovson says that in all of 121 cases of uncomplicated fractures and four of hemarthrosis there was a rise in the sedimentation speed of the red blood corpuscles above the normal value, the rise appearing during the first twenty-four hours in 75 per cent of the cases. The maximum was reached from the fifth to the seventh day and was followed by a slow decline, with return to normal value after well advanced consolidation. This reaction depends partly on the extent of the lesions of the bones and soft parts, partly on the patient's age. How significant the reaction may be from the practical clinical point of view, as an indication of the consolidation and healing of the fracture, cannot now be determined.